Heritage Oaks Estates East Project

SCH# 2024031192

Draft Environmental Impact Report

Prepared for
City of Wheatland

INC. 1874

June 2024

Prepared by
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Heritage Oaks Estates East Project Draft Environmental Impact Report

SCH# 2024031192

Lead Agency

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1. Introduction

1. INTRODUCTION

1.1 TYPE AND PURPOSE OF THE EIR

The Heritage Oaks Estates East Project Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, Public Resources Code (PRC) Sections 21000-21189, as amended, and the Guidelines for Implementation of the California Environmental Quality Act, California Code of Regulations (CCR) Title 14, Sections 15000-15387 (CEQA Guidelines).[1] The City of Wheatland is the lead agency for the environmental review of the Heritage Oaks Estates East Project (proposed project) evaluated herein and has the principal responsibility for approving the project. As required by Section 15121 of the CEQA Guidelines, this EIR will (a) inform public agency decision-makers, and the public generally, of the significant environmental effects of the project, (b) identify possible ways to minimize the significant adverse environmental effects, and (c) describe reasonable and feasible project alternatives which reduce environmental effects. The public agency shall consider the information in the EIR along with other information that may be presented to the agency.

As provided in the CEQA Guidelines Section 15021, public agencies are charged with the duty to avoid or minimize environmental damage where feasible. The public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social issues. CEQA requires the preparation of an EIR prior to approving any project that may have a significant effect on the environment. For the purposes of CEQA, the term *project* refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]). With respect to the proposed project, the City has determined that the proposed development is a *project* within the definition of CEQA and has the potential for resulting in significant environmental effects.

The lead agency is required to consider the information in the EIR along with any other available information in deciding whether to approve the project. The basic requirements for an EIR include discussions of the environmental setting, environmental impacts, mitigation measures, alternatives, growth-inducing impacts, and cumulative impacts.

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a *project-level EIR* pursuant to CEQA Guidelines Section 15161, which is an analysis that examines the environmental impacts of a specific development project. A *project-level EIR* focuses primarily on the changes in the environment that would result from the development of the project, and examines all phases of the project, including planning, construction, and operation.

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[1] Public Resources Code Sections 21000-21178 may be accessed by navigating from the following address: https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml. Title 14 of the California Code of Regulations Sections 15000-15387 (Division 6, Chapter 3) may be accessed by navigating from the following address: https://oal.ca.gov/publications/ccr/.

1.2 KNOWN RESPONSIBLE AND TRUSTEE AGENCIES

"Responsible agency" is defined as a public agency that proposes to carry out or approve a project for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For the purpose of CEQA, the term responsible agency includes all California public agencies other than the lead agency that have discretionary approval power over the project or an aspect of the project. The Central Valley Regional Water Quality Control Board (RWQCB) and the California Department of Transportation (Caltrans) would be considered responsible agencies for the proposed project.

"Trustee agency" means a State agency having jurisdiction by law over natural resources affected by a project, which are held in trust for the people of the State of California. The only known possible trustee agency is the California Department of Fish and Wildlife (CDFW).

Although not subject to California law, and, thus, outside the definitions of responsible agency or trustee agency, the U.S. Army Corps of Engineers (USACE) and U.S. Fish and Wildlife Service (USFWS) will also be called upon to grant approvals — under federal law — necessary for the development of the project site. The above agencies do not have duties under CEQA, but, rather, are governed by a variety of federal statutes, such as the Endangered Species Act.

1.3 PROJECT SUMMARY

The following sections provide an overview of the project location and components. For additional project description details, please refer to Chapter 3, Project Description, of this EIR.

Project Location and Setting

The project site consists of approximately 148.70 acres of undeveloped land and is located west of State Route (SR) 65 and south of Main Street in the City of Wheatland, California. The project site is identified by Assessor's Parcel Numbers (APNs) 015-490-023 through -028 and 015-720-009 through -013. The City of Wheatland General Plan designates the site as Low Density Residential (LDR) and Park, and the project site is zoned Planned Development (PD).

Currently, the project site consists of generally flat, vacant land that has been subject to mass disturbance through regular mowing activities. Malone Avenue runs in a northwest-to-southeast direction through the northern portion of the project site and continues to travel southeast, forming a portion of the project site's western boundary. Various trees and shrubs are scattered throughout the southern portion of the project site. Surrounding existing land uses include the Grasshopper Slough, single-family residences, multi-family residences, and commercial uses to the north; Union Pacific Railroad (UPRR) tracks and agricultural land to the east, across SR 65; Bear River, the City of Wheatland Wastewater Treatment Plant (WWTP), and agricultural land to the south; and agricultural land, undeveloped land, and Bishop's Pumpkin Farm to the west.

Project Site Background

An EIR was originally prepared in 2002 for the entire Heritage Oaks Estates project, which included the project site. The 2002 project required approval of Annexation of the project site into the City of Wheatland, a General Plan Amendment, and a Rezone. The City of Wheatland City Council approved a Development Agreement and Tentative Subdivision Map for the proposed project site; however, both entitlements have since expired.

Project Description

The proposed project would generally include the development of the project site with up to 685 single-family residences, as well as various associated improvements, including, but not limited to, several community parks, a landscape corridor, open space, an internal roadway system, and various landscaping and utility improvements.

The proposed project would require City approval of a General Plan Amendment, Rezone and associated General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review. Due to the project's proposed lot sizes, the proposed project would require approval of a General Plan Amendment to change the site's designation from LDR to Low-Medium Density Residential (LMDR) and Medium Density Residential (MDR), and would require approval of a Rezone to amend the PD zoning district and establish site-specific development standards. The proposed Vesting Tentative Subdivision Map includes subdivision of the project site into 681 single-family residential lots grouped into 10 "villages" containing between 35 and 101 lots. It should be noted that, for conservative purposes, the environmental analysis within this EIR will be based on development of up to 685 residential units. Finally, residential developments projects with more than four units are subject to the City's Site Plan and Design Review process, which allows the City to evaluate the proposed project's compliance with various City of Wheatland standards and regulations.

1.4 EIR PROCESS

The EIR process begins with the decision by the lead agency to prepare an EIR, either during a preliminary review of a project or at the conclusion of an Initial Study. Once the decision is made to prepare an EIR, the lead agency sends a Notice of Preparation (NOP) to appropriate government agencies and, when required, to the State Clearinghouse (SCH) in the Office of Planning and Research (OPR), which will ensure that responsible and trustee State agencies reply within the required time. The SCH assigns an identification number to the project, which then becomes the identification number for all subsequent environmental documents on the project. Commenting agencies have 30 days to respond to the NOP and provide information regarding alternatives and mitigation measures they wish to have explored in the Draft EIR and to provide notification regarding whether the agency will be a responsible agency or a trustee agency for the project. An NOP was prepared for the proposed project and circulated from March 29, 2024 through April 29, 2024. A public scoping meeting was held on April 25, 2024 for the purpose of informing the public and receiving comments on the scope of the environmental analysis to be prepared for the proposed project. See Section 1.6 below for a summary of comments received on the NOP.

Once the Draft EIR is completed, a Notice of Completion will be filed with the SCH and a public notice of availability will be published to inform interested parties that a Draft EIR is available for agency and public review. In addition, the notice provides information regarding the location of copies of the Draft EIR available for public review and any public meetings or hearings that are scheduled. The Draft EIR will be circulated for a period of 45 days, during which time reviewers may make comments. The lead agency must respond to comments in writing, describing the disposition of any significant environmental issues raised and explaining in detail the reasons for not accepting any specific comments concerning major environmental issues. If significant new information, as defined in CEQA Guidelines Section 15088.5, is added to an EIR after public notice of availability is given but before certification of the EIR, the revised EIR or affected chapters must be recirculated for an additional public review period with related comments and responses.

A Final EIR will be prepared, containing comments and responses to comments on the Draft EIR. The Final EIR will also include any changes to the Draft EIR text made as a result of public comment. Before approving a project, the lead agency shall certify that the Final EIR has been completed in compliance with CEQA, and that the Final EIR has been presented to the decision-making body of the lead agency, which has reviewed and considered the EIR. The lead agency shall also certify that the Final EIR reflects the lead agency's independent judgment and analysis. The findings prepared by the lead agency must be based on substantial evidence in the administrative record and must include an explanation that bridges the gap between evidence in the record and the conclusions required by CEQA. If the decision-making body elects to proceed with a project that would have unavoidable significant impacts, then a Statement of Overriding Considerations explaining the decision to balance the benefits of the project against unavoidable environmental impacts must be prepared.

1.5 SCOPE OF THE EIR

This EIR constitutes a project-level analysis for the Heritage Oaks Estates East Project and, pursuant to CEQA Guidelines Section 15161, covers "all phases of the project including planning, construction, and operation." State CEQA Guidelines Section 15126.2(a) states, in pertinent part:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced.

Pursuant to the CEQA Guidelines, the scope of this EIR addresses specific issues and concerns identified as potentially significant based on a determination by the City of Wheatland.

Environmental Issues Addressed in this EIR

The sections of the CEQA Guidelines Appendix G Checklist identified for study in this EIR include the following:

- Air Quality and Greenhouse Gas Emissions;
- Noise;
- Transportation;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Other Effects (all other CEQA checklist sections).

The evaluation of effects is presented on a resource-by-resource basis in Chapters 4.1 through 4.6 of the EIR. Chapters 4.1 through 4.5 are each divided into the following four sections: Introduction, Existing Environmental Setting, Regulatory Context, and Impacts and Mitigation Measures. Chapter 4.6 is divided into each of the remaining sections of the CEQA Guidelines Appendix G Checklist. Impacts that are determined to be significant in Chapters 4.1 through 4.6, and for which feasible mitigation measures are not available to reduce those impacts to a less-than-significant level, are identified as *significant and unavoidable*. Chapter 5 presents a discussion of growth-inducing impacts, a summary of cumulative impacts, and significant irreversible as well as significant unavoidable environmental changes associated with the project. Alternatives to the proposed project are discussed in Chapter 6 of this EIR.

1.6 COMMENTS RECEIVED ON THE NOTICE OF PREPARATION

During the NOP public review period from March 29, 2024 to April 29, 2024, the City of Wheatland received five comment letters. One additional letter was received after the comment period closed, on May 3, 2024. Verbal comments were not received at the public scoping meeting held on March 29, 2024. A copy of each letter submitted is provided in Appendix B to this EIR. The comment letters received were authored by the following representatives of public agencies and individuals:

Public Agencies

- Central Valley Regional Water Quality Control Board — Peter Minkel;
- Central Valley Flood Protection Board — Andrea Buckley; and
- Native American Heritage Commission — Pricilla Torres-Fuentes.

Individuals

- Karen Sutton;
- Steve DeValentine; and
- Melinda Gallagher.

The following list, categorized by issue, summarizes the concerns brought forth in the comment letters received on the scope of the EIR:

Transportation (Chapter 4.3)	Concerns related to: • Traffic congestion. • Wear and tear on local roads from increased use.
Tribal Cultural Resources (Chapter 4.4)	Concerns related to: • Compliance with Assembly Bill 52 and Senate Bill 18 requirements. • Contacting the appropriate information centers regarding archaeological records searches and field surveys. • Conducting a Sacred Lands File search and attaining a Native American Tribal Consultation list from the Native American Heritage Commission (NAHC). • Inadvertently discovered Native American cultural items and/or human remains.
Utilities and Service Systems (Chapter 4.5)	Concerns related to: • Changes to drainage patterns.
Other Effects (Chapter 4.6)	Concerns related to: • Impacts to farmland. • Impacts to habitat for bees. • Changes to water quality within, upstream, and downstream of the project site. • Compliance with all applicable permits related to flood risks and public safety.

All of the above issues are addressed in this EIR, in the relevant sections identified in the first column.

1.7 DRAFT EIR AND PUBLIC REVIEW

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, the general public, organizations, and agencies can submit comments to the lead agency on the Draft EIR's accuracy and completeness. Release of the Draft EIR marks the beginning of a 45-day public review period pursuant to CEQA Guidelines Section 15105. The public can review the Draft EIR at the City's website at:

http://www.wheatland.ca.gov/departments/community-development/

All comments or questions regarding the Draft EIR should be addressed to:

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Wheatland, CA 95692
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1.8 ORGANIZATION OF THE DRAFT EIR

The EIR is organized into the following sections:

Chapter 1 – Introduction

Provides an introduction and overview describing the intended use of the Draft EIR and the review and certification process, as well as summaries of the chapters included in the Draft EIR and summaries of the issues and concerns received from the public and public agencies during the NOP review period.

Chapter 2 – Executive Summary

Summarizes the elements of the project and the environmental impacts that would result from implementation of the proposed project, describes proposed mitigation measures, and indicates the level of significance of impacts after mitigation.

Chapter 3 – Project Description

Provides a detailed description of the proposed project, including the project's location, background information, objectives, and technical characteristics.

Chapter 4 – Environmental Setting, Impacts, and Mitigation

Contains a project-level and cumulative analysis of environmental issue areas associated with the proposed project. The section for each environmental issue contains an introduction and description of the setting of the project site, identifies impacts, and recommends appropriate mitigation measures.

Chapter 5 – Statutorily Required Sections

The Statutorily Required Sections chapter of the EIR provides discussions required by CEQA regarding impacts that would result from the proposed project, including a summary of cumulative impacts, potential growth-inducing impacts, significant and unavoidable impacts, and significant irreversible changes to the environment.

Chapter 6 – Alternatives Analysis

The Alternatives Analysis chapter of the EIR describes and evaluates the alternatives to the proposed project. It should be noted that the alternatives will be analyzed at a level of detail less than that of the proposed project; however, the analyses will include sufficient detail to allow for a meaningful comparison of impacts

Chapter 7 – EIR Authors and Persons Consulted

The EIR Authors and Persons Consulted chapter of the EIR lists EIR and technical report authors who provided technical assistance in the preparation and review of the EIR.

Chapter 8 – References

The References chapter of the EIR provides bibliographic information for all references and resources cited.

Appendices

The Appendices include the NOP, comments received during the NOP comment period, and technical reports prepared for the proposed project.

2. Executive Summary

2. EXECUTIVE SUMMARY

2.1 INTRODUCTION

The Executive Summary chapter of the EIR provides an overview of the Heritage Oaks East Project (proposed project) and summarizes the conclusions of the environmental analysis provided in Chapters 4.1 through 4.6. In addition, the chapter outlines the mitigation monitoring plan, summarizes the alternatives to the proposed project that are described in the Alternatives Analysis chapter, identifies the Environmentally Superior Alternative, and discusses areas of controversy and issues to be resolved. Table 2-1, found at the end of this chapter, provides a summary of the environmental effects of the proposed project, as identified in each technical chapter of this EIR. Table 2-1 also contains the potential environmental impacts associated with the proposed project, the significance of the impacts, the proposed mitigation measures for the impacts, and the significance of the impacts after implementation of the mitigation measures.

2.2 SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

The approximately 148.70-acre is located west of State Route (SR) 65 and south of Main Street in the City of Wheatland, California, and is currently undeveloped. The project site consists of generally flat, vacant land that has been subject to prior mass grading and ongoing disturbance through annual mowing. Malone Avenue runs in a northwest-to-southeast direction through the northern portion of the project site and continues to travel southeast as a portion of the project site’s western boundary. Various trees and shrubs are scattered throughout the southern portion of the project site.

The primary goal of the proposed project is to develop up to 685 single-family residences, as well as various associated improvements, including, but not limited to, several community parks, a landscape corridor, open space, an internal roadway system, and various landscaping and utility improvements. The proposed project would require City approval of a General Plan Amendment, Rezone and associated General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review.

Please refer to Chapter 3, Project Description, of this EIR for a detailed description of the proposed project and entitlements, as well as a full list of the project objectives.

2.3 ENVIRONMENTAL IMPACTS AND PROPOSED AND RECOMMENDED MITIGATION

Under CEQA, a significant effect on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic or aesthetic significance. Mitigation measures must be implemented as part of the proposed project to reduce potential adverse impacts. Such mitigation measures are noted in this EIR and are found in the following technical chapters: Air Quality and Greenhouse Gas Emissions; Noise; Transportation; Tribal Cultural Resources; Utilities and Service Systems; and Other Effects. The mitigation measures presented in the EIR will form the basis of the Mitigation Monitoring and

Reporting Program. Any impact that remains significant after implementation of mitigation measures is considered a significant and unavoidable impact.

A summary of the identified impacts in the technical chapters of the EIR is presented in Table 2-1. In addition, Table 2-1 includes the level of significance of each impact, any mitigation measures required for each impact, and the resulting level of significance after implementation of mitigation measures for each impact.

2.4 SUMMARY OF PROJECT ALTERNATIVES

The following section presents a summary of the evaluation of the alternatives considered for the proposed project, which include the following:

- No Project (No Build) Alternative;
- Buildout Pursuant to Existing General Plan Alternative; and
- Increased Density Alternative.

For a more thorough discussion of project alternatives, refer to Chapter 6, Alternatives Analysis, of this EIR.

No Project (No Build) Alternative

The City has decided to evaluate a No Project (No Build) Alternative, which assumes that the current conditions of the project site would remain, and the site would not be developed. As described in this EIR, the project site is generally flat, vacant land that has been subject to mass disturbance through regular mowing activities. Vegetation on the site consists primarily of sparse ruderal vegetation, along with various trees and shrubs within the southern portion of the project site. In addition, Malone Avenue runs in a northwest-to-southeast direction through the northern portion of the project site and continues to travel southeast as a portion of the project site's western boundary. The No Project (No Build) Alternative would not meet any of the project objectives and would not meet the overall intent of the City's land use designation for this site.

Buildout Pursuant to Existing General Plan Alternative

Under the Buildout Pursuant to Existing General Plan Alternative, the proposed project would be developed pursuant to the existing Low Density Residential (LDR) designation, as compared to the currently proposed Low-Medium Density Residential (LMDR) and Medium Density Residential (MDR) designations. The LDR designation allows for a density range of 3.0 to 4.0 dwelling units per acre (du/ac). As currently proposed, the net density of the residential villages would be 6.51 du/ac, while the gross density based on the total acreage would be 4.58 du/ac. Under the Buildout Pursuant to Existing General Plan Alternative, assuming the project were built pursuant to the maximum allowable 4.0 du/ac, the number of residential units on the site would be reduced to a maximum of 594 units, compared to the currently proposed maximum of 685 units, which would be a decrease of 91 units.

The proposed development area of the project site would not change under the Buildout Pursuant to Existing General Plan Alternative, and all other site improvements required under the proposed project would still be developed under the Buildout Pursuant to Existing General Plan Alternative, including parks and open space, an internal roadway network, and utilities improvements.

The Alternative would still require the approval of a Rezone and General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review. Furthermore, although the

Buildout Pursuant to Existing General Plan Alternative would generally result in similar development as the proposed project, because the Alternative would include the development at a lower density and 91 fewer units, Objective 1 would only partially be met. Additionally, Objectives 9 and 10 would only be partially met because the reduction of 91 units would result in less potential for sufficient funding of maintaining landscape and public facilities, as well as less new property tax and sales tax revenue. The remaining project objectives would be met by the Buildout Pursuant to Existing General Plan Alternative.

Increased Density Alternative

Under the Increased Density Alternative, Villages 7, 8, and 9 would be developed with high-density, affordable multi-family residences, as compared to the currently proposed low-medium to medium density residences. Villages 7, 8, and 9 were selected for high-density affordable residential development under the Alternative due to the location of the villages, which are furthest away from the existing single-family residences to the north of the project site, in close proximity (i.e., providing easy access) to SR 65, and adjacent to parcels designated for high-density residential and commercial development. Thus, development of Village 7, 8, and 9 with high-density residential uses would be compatible with the nearby planned development and would be most suitable for high-density and affordable housing compared to the remainder of the project site.

The Increased Density Alternative would require the approval of a General Plan Amendment to change the General Plan land use designation of the indicated portions of the project site to High Density Residential (HDR). The HDR land use designation allows densities of 8.1 to 16.0 du/ac. The Increased Density Alternative would include the development of the identified portions of the project site at a density of 16.0 du/ac, the maximum allowable density within the HDR land use designation. The low-medium and medium density residences proposed within the remainder of the project site would not be modified as part of the Alternative. Villages 7, 8, and 9 are 7.47 acres, 8.08 acres, and 11.99 acres in size, respectively. As such, a maximum of 440 HDR units would be developed on the identified portions of the site, while the remaining Villages, as currently proposed, would include a total of 512 units within the proposed LMDR and MDR designations. A total of 952 overall residential units would be developed under the Increased Density Alternative at an overall residential density of 6.4 du/ac, which would be an increase of 267 residential units compared to the proposed project.

The proposed development area of the project site would not change under the Increased Density Alternative, and all other site improvements required under the proposed project would still be developed under the Increased Density Alternative, including an internal roadway network and utilities improvements. The Increased Density Alternative would also include the same type and amount of the open space areas as the proposed project.

In addition, the Alternative would still require the approval of a General Plan Amendment, Rezone and General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review. All project objectives would be met by the Increased Density Alternative.

Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. The environmentally superior alternative is generally the alternative that would be expected to generate the least amount of significant impacts. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the City. Section 15126(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states, “If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.”

Although the No Project (No Build) Alternative would not meet any of the project objectives, the project site is assumed to remain in its current condition under the Alternative and none of the impacts resulting from the proposed project would occur under the Alternative. As such, the No Project (No Build) Alternative would be considered the environmentally superior alternative. In accordance with Section 15126(e)(2) of the CEQA Guidelines, if the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

The Buildout Pursuant to Existing General Plan Alternative would only partially meet Objectives 1, 9, and 10, but would meet the remaining project objectives. The Buildout Pursuant to Existing General Plan Alternative would result in similar impacts compared to the proposed project, with fewer impacts related to air quality and GHG emissions. However, the significant and unavoidable impacts identified for the proposed project would still remain under the Buildout Pursuant to Existing General Plan Alternative. Given that the Buildout Pursuant to Existing General Plan Alternative is also a form of a no project alternative in accordance with Section 15126(e)(2) of the CEQA Guidelines, the Buildout Pursuant to Existing General Plan Alternative could not be considered that environmentally superior alternative.

As a result, the Increased Density Alternative would be considered the Environmentally Superior Alternative. Because the Increased Density Alternative would generally result in similar development as the proposed project, with the addition of high-density and affordable residential units, all project objectives would be met. The Increased Density Alternative would result in similar impacts as the proposed project related to most resource areas, greater impacts related to air quality and GHG emissions, and fewer impacts related to transportation. The significant and unavoidable impacts identified for the proposed project would remain under the Increased Density Alternative. It should be noted that the VMT reduction strategies included in the Increased Density Alternative, as set forth by CAPCOA also reduce GHG emissions, considered co-benefits, by reducing the source metric of VMT (i.e., vehicle ownership, number of vehicle trips, and trip distance).

2.5 AREAS OF CONTROVERSY

The CEQA Guidelines, Section 15123(b), require that this EIR consider areas of controversy known to the lead agency, including issues raised by agencies and the public. Areas of controversy that were identified in NOP comment letters should be considered, as well. The areas of known controversy for the project site relate to the following:

- Changes to drainage patterns and water quality within, upstream, and downstream of the project site.
- Traffic congestion.
- Wear and tear on the road from increased use.
- Compliance with Assembly Bill 52 and Senate Bill 18 requirements.
- Contacting the appropriate information centers regarding archaeological records searches and field surveys.

- Conducting a Sacred Lands File search and attaining a Native American Tribal Consultation list from the Native American Heritage Commission (NAHC).
- Inadvertently discovered Native American cultural items and/or human remains.
- Impacts to farmland.
- Impacts to habitat for bees.

Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.1 Air Quality and Greenhouse Gas Emissions			
4.1-1 Conflict with or obstruct implementation of the applicable air quality plan during project construction.	LS	*None required.*	N/A
4.1-2 Conflict with or obstruct implementation of the applicable air quality plan during project operation.	S	*4.1-2(a) Prior to issuance of any building permits, the project applicant shall ensure that only zero-VOC paints, finishes, adhesives, and cleaning supplies shall be used for all buildings on the project site.* *The aforementioned requirements shall be noted on the project Improvement Plans, Conditions, Covenants and Restrictions (CC&Rs), and the Informational Sheet filed with the Final Subdivision Map(s), and submitted for review and approval by the City of Wheatland Community Development Department.* *4.1-2(b) Implement Mitigation Measure 4.3-3.*	SU
4.1-3 Expose sensitive receptors to substantial pollutant concentrations.	LS	*None required.*	N/A
4.1-4 Result in other emissions (such as those leading to odors) affecting a substantial number of people.	LS	*None required.*	N/A
4.1-5 Result in a cumulatively considerable net increase of any criteria pollutant for which	CC	*4.1-5 Implement Mitigation Measures 4.1-2(a) and 4.1-2(b).*	SU

N/A = *Not Applicable*; NI= No Impact; LS = *Less-than-Significant*; S = *Significant*; SU = *Significant and Unavoidable; LCC = Less than Cumulatively Considerable; CC = Cumulatively Considerable*

Table 2-1
Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
	the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).				
4.1-6	**Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.**	CC	*4.1-6*	*Prior to approval of project Improvement Plans, proof of compliance with the following sustainability measure listed in the City CAP's Sustainability Checklist shall be submitted to the City of Wheatland Community Development Department for review and approval:* • *At least 25 percent of all proposed roadways and intersections shall be designed with traffic calming and congestion management measures. Such measures could include, but shall not be limited to, the following:* ○ *Raised median islands;* ○ *Marked crosswalks;* ○ *Count-down signal timers;* ○ *Curb extensions;* ○ *Raised crosswalks;* ○ *Raised intersections;* ○ *Median islands;* ○ *Chicanes/chokers;* ○ *Rumble strips;* ○ *Roundabouts or mini-circles;*	LCC

N/A = *Not Applicable*; NI= No Impact; LS = *Less-than-Significant*; S = *Significant*; SU = *Significant and Unavoidable; LCC = Less than Cumulatively Considerable; CC = Cumulatively Considerable*

Table 2-1
Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
			○ *Speed tables;* ○ *Tight corner radii;* ○ *On-street parking; and* ○ *Planter strips with street trees.*	
			4.2 Noise	
4.2-1	**Generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**	LS	*None required.*	N/A
4.2-2	**Generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**	LS	*None required.*	N/A
4.2-3	**Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.**	LS	*None required.*	N/A
4.4-4	**For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been**	LS	*None required.*	N/A

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.			
4.2-5 Generation of a substantial permanent increase in ambient noise levels associated with cumulative development of the proposed project in combination with future buildout of the City of Wheatland.	LS	*None required.*	N/A
		4.3 Transportation	
4.3-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system during construction activities.	S	*4.3-1 Prior to issuance of grading and building permits, for all improvements where implementation may cause impacts on traffic along roadways within their respective areas of jurisdiction, the project applicant shall prepare a traffic control plan for review and approval by the City of Wheatland Public Works Department and the California Department of Transportation (Caltrans). The traffic control plan must follow all applicable City standards. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction,*	LS

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		access to existing land uses shall be maintained at all times, with detours used as necessary during road closures. The traffic control plan shall, at minimum, include the following measures: • *Maintain the maximum amount of travel lane capacity during non-construction periods, as possible, and provide advanced notice to drivers through construction signage.* • *Maintain alternate one-way traffic flow past the lay down area and site access when feasible.* • *Heavy trucks and other construction transport vehicles shall avoid the busiest commute hours (7:00 AM to 8:00 AM and 5:00 PM to 6:00 PM on weekdays).* • *The contractor(s) shall provide a minimum 72-hour advance notice to the City of access restrictions, which shall include the identification of alternative routes and detours to enable the avoidance of the immediate construction zone.* • *The contractor(s) shall provide a phone number and community contact for inquiries about the schedule of the construction throughout the construction period.* • *All construction equipment shall be staged on-site.*	

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4.3-2 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway bicycle, and pedestrian facilities, during operations.	LS	*None required.*	N/A
4.3-3 Result in VMT which exceeds an applicable threshold of significance, except as provided in CEQA Guidelines Section 15064.3, subdivision (b).	S	*4.3-3 Prior to the issuance of building permits, the project applicant shall develop a Transportation Demand Management (TDM) Plan for review and approval by the City of Wheatland Department of Public Works. The TDM Plan shall contain the following VMT reduction strategy:* • *Implement community-based travel planning through a residential-based approach to outreach that provides households and residents with information, incentives, and support to encourage the use of alternative modes of transportation to single-occupancy vehicles. Implementation of this measure shall include the project applicant providing future homeowners of the proposed project with information regarding carpooling, vanpooling, and other ride-sharing programs available for residents within the community as part of the Conditions, Covenants and Restrictions (CC&Rs).*	LS

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4.3-4	**Substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).**	LS	*None required.*		N/A
4.3-5	**Result in inadequate emergency access or access to nearby uses.**	LS	*None required.*		N/A
			4.4 Tribal Cultural Resources		
4.4-1	**Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074.**	S	*4.4-1(a)*	*Prior to initiation of construction, all construction crew members, consultants, and other personnel involved in project implementation shall receive project-specific tribal cultural resource awareness training. The training shall be conducted in coordination with qualified cultural resource specialists and representatives from culturally-affiliated Native American Tribes. The training will emphasize the requirement for confidentiality and culturally-appropriate, respectful treatment of any find of significance to culturally-affiliated Native Americans Tribes. All personnel required to receive the training shall also be required to sign a form that acknowledges receipt of the training, which shall be submitted to the City of Wheatland Community Development Department for review and approval.* *As a component of the training, a brochure will be distributed to all personnel associated with project*	LS

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		implementation. At a minimum the brochure shall discuss the following topics in clear and straightforward language: • *Field indicators of potential archaeological or cultural resources (i.e., what to look for; for example: archaeological artifacts, exotic or non-native rock, unusually large amounts of shell or bone, significant soil color variation, etc.);* • *Regulations governing archaeological resources and tribal cultural resources;* • *Consequences of disregarding or violating laws protecting archaeological or tribal cultural resources; and* • *Steps to take if a worker encounters a possible resource.* *The training shall include project-specific guidance for on-site personnel including agreed upon protocols for resource avoidance, when to stop work, and who to contact if potential archaeological or tribal cultural resources are identified. The training shall also direct work to stop, and contact with the County Coroner and the NAHC to occur immediately, in the event that potential human remains are identified. NAHC will assign a Most Likely Descendant if the remains are determined by the Coroner to be Native American in origin.*	

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		4.4-1(b) The following language shall be noted on project Improvement Plans, subject to review and approval by the City of Wheatland Community Development Department, and shall be implemented during project construction: *If potential tribal cultural resources, archaeological resources, other cultural resources, articulated, or disarticulated human remains are discovered during construction activities, all work shall cease within 100 feet of the find (based on the apparent distribution of cultural resources). Examples of potential cultural materials include midden soil, artifacts, chipped stone, exotic (non-native) rock, or unusual amounts of baked clay, shell, or bone.* *A qualified cultural resources specialist from the Lead Agency and Native American Representative from the traditionally and culturally affiliated Native American Tribe(s) will assess the significance of the find and make recommendations for further evaluation and treatment as necessary. Culturally appropriate treatment that preserves or restores the cultural character and integrity of a tribal cultural resource may be, but is not limited to, processing materials*	

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		for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, construction monitoring of further construction activities by Tribal representatives of the traditionally and culturally affiliated Native American Tribe, and/or returning objects to a location within the project area where they will not be subject to future impacts. The United Auburn Indian Community of the Auburn Rancheria (UAIC) does not consider curation of tribal cultural resources to be appropriate or respectful and requests that materials not be permanently curated, unless specifically requested by the Tribe. *If articulated or disarticulated human remains are discovered during construction activities, the County Coroner and Native American Heritage Commission shall be contacted immediately. Upon determination by the County Coroner that the find is Native American in origin, the Native American Heritage Commission will assign the Most Likely Descendant(s) who will work with the project proponent to define appropriate treatment and disposition of the burials.*	

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		Following a review of the find and consultation with appropriate experts, the authority to proceed may be accompanied by the addition of development requirements which provide for protection of the site and/or additional measures necessary to address the unique or sensitive nature of the site. The treatment recommendations made by the cultural resource specialist and the Native American Representative will be documented in the project record. Any recommendations made by these experts that are not implemented, must be documented and explained in the project record. Work in the area(s) of the cultural resource discovery may only proceed after authorization is granted by the City of Wheatland Community Development Department following coordination with cultural resources experts and tribal representatives as appropriate. *4.4-1(c) The following language shall be noted on project Improvement Plans, subject to review and approval by the City of Wheatland Community Development Department, and shall be implemented during project construction:*	

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		The project proponent shall give at least two (2) weeks' notice prior to initiating ground-disturbing activities within the mapped sensitive areas agreed upon during AB 52 consultation between the City of Wheatland and the UAIC (confidential mapped areas provided to the City). The purpose of the notification will be to allow UAIC the opportunity to conduct monitoring. In the event that UAIC does not respond, or a tribal monitor does not report to the job site at the scheduled time, construction activities may proceed without monitoring as long as at no time, regardless of the presence or absence of a tribal monitor, shall suspected tribal cultural resources be mishandled or disrespected. *A contracted Tribal Monitor(s) shall monitor the vegetation grubbing, stripping, grading, trenching, and other ground-disturbing activities in the project area. All ground-disturbing activities shall be subject to Tribal Monitoring unless otherwise determined unnecessary by the UAIC.* *The Tribal Monitor shall have the authority to temporarily pause ground disturbance within 100 feet of a discovery for a duration long*	

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		enough to examine the resource. If no resources are identified, then construction activities shall proceed, and no agency notifications are required. In the event that a tribal cultural resource is identified, the Tribal Monitor shall flag off the discovery location and notify the City immediately to coordinate regarding appropriate and respectful treatment pursuant to State law. *The Tribal Monitor shall wear appropriate construction safety equipment including steel-toed boots, construction vest, and hard hat.*	
4.4-2 Cumulative loss of tribal cultural resources.	LS	*None required.*	N/A
4.5 Utilities and Service Systems			
4.5-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	LS	*None required.*	N/A

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4.5-2	**Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.**	LS	*None required.*		N/A
4.5-3	**Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.**	LS	*None required.*		N/A
4.5-4	**Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or conflict with federal, State, and local management and reduction statutes and regulations related to solid waste.**	LS	*None required.*		N/A
4.5-5	**Substantially alter the existing drainage pattern of the site or area, including through the**	S	*4.5-5*	*As part of the improvement plan and final map submittal process, the project applicant shall prepare and submit a Final Drainage Plan to the City*	LS

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	alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.		*Engineer for review and approval. The Final Drainage Plan shall be reviewed in concert with the improvement plans to confirm conformity between the two. The Final Drainage Plan shall be prepared in conformance with the applicable requirements of City of Wheatland Public Works Construction Standards that are in effect at the time of improvement plan submittal.*	
4.5-6	**Increase in demand for utilities and service systems associated with the proposed project, in combination with future buildout of the Wheatland General Plan.**	LS	*None required*	N/A
4.5-7	**Cumulative impacts related to the alteration of existing drainage patterns.**	LS	*None required.*	N/A
4.6 Other Effects				
4.6.2 Aesthetics				
a. **b.**	**Have a substantial adverse effect on a scenic vista.** **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic**	LS	*None required.*	N/A

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	buildings, within a State scenic highway.			
c.	**In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point), or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality**	LS	*None required.*	N/A
d.	**Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.**	LS	*None required.*	N/A
	4.6.3 Agriculture and Forestry Resources			
a.	**Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.**	LS	*None required.*	N/A

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e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.			
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract.	NI	*None required.*	N/A
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code [PRC] Section 12220[g]), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]). **d. Result in the loss of forest land or conversion of forest land to non-forest use.**	NI	*None required.*	N/A
4.6.4 Biological Resources			
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a	S	Crotch's Bumble Bee *4.6-1 A qualified biologist shall conduct one preconstruction nesting surveys with focus on detecting active Crotch's bumble bee nesting*	LS

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candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.		*colonies within seven days prior to ground-disturbing activities that are scheduled to occur during the flight season (February through October). The results of the survey shall be submitted to the City of Wheatland Community Development Department.* *The survey shall be conducted within suitable nesting habitat during suitable weather conditions at an appropriate time of day for detection. If nests or Crotch's bumble bees are not observed, further measures are not necessary. If nests are not found, but the species is present, a qualified biological monitor shall be present during initial vegetation or ground-disturbing activities that are scheduled to occur between February and October. The qualified biologist shall immediately notify the California Department of Fish and Wildlife (CDFW) of the detection, as further coordination may be required to avoid or mitigate certain impacts.* *If an active Crotch's bumble bee nest is detected on-site, an appropriate no-disturbance buffer zone shall be established around the nest, as determined by the qualified biologist, to reduce the risk of disturbance or incidental take. The designated biologist shall coordinate with CDFW to determine if additional avoidance or minimization measures are required. Nest avoidance buffers may be removed at the completion of the flight season and/or once the*	

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		qualified biologist deems the nesting colony is no longer active, and CDFW agrees with the determination. Proof of compliance with applicable avoidance or minimization measures shall be submitted to the Wheatland Community Development Department. Northwestern Pond Turtle *4.6-2 Ten days prior to the start of ground- or vegetation-disturbing activities, a qualified biologist shall conduct a focused survey for northwestern pond turtle nests within all suitable habitat in the project site. Any discovered nests shall remain undisturbed until eggs have hatched. The results of the survey shall be submitted to the City of Wheatland Community Development Department.* *4.6-3 Forty-eight hours prior to the start of ground- or vegetation-disturbing activities, a qualified biologist shall conduct a preconstruction survey for northwestern pond turtle within all suitable habitat in the project site. Any individual northwestern pond turtles discovered on-site immediately prior to or during construction of the proposed project shall be allowed to move out of the work area of their own volition. If leaving the species to evacuate the project site voluntarily is not feasible, the on-site individuals shall be captured by a qualified biologist and relocated out of harm's way to the nearest suitable*	

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		habitat at least 100 feet from the on-site location where they were found. The results of the survey shall be submitted to the City of Wheatland Community Development Department. Valley Elderberry Longhorn Beetle *4.6-4* *Prior to commencement of construction activities, avoidance zones for elderberry shrubs shall be established and clearly demarcated, where feasible, to the satisfaction of the City of Wheatland Community Development Department. Avoidance zones shall include the drip line of the elderberry shrub plus a 20-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. The area to be avoided shall be fenced and/or flagged as close to construction limits as possible. Ground- or vegetation-disturbing activities shall not occur within avoidance zones. A qualified biologist/biological monitor shall be present if work must occur within the avoidance buffer to ensure elderberry shrubs are not impacted by the proposed project.* *4.6-5* *Prior to commencement of construction activities, the elderberry shrub along Malone Avenue shall be transplanted to the portion of the Bear River riparian area located south of the project site at a location that avoids existing shrubs by a minimum of 20 feet. The transplanting shall follow USFWS VELB*	

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		Guidance and the most current version of the Tree Care Industry Association (TCIA) ANSI A300 (Part 6) guidelines for transplanting. A qualified biologist/biological monitor shall be present for the duration of transplanting activities to ensure VELB and existing elderberry shrubs are not impacted by the work. Proof of transplantation shall be submitted to the Wheatland Community Development Department. *4.6-6* *During construction activities associated with the proposed project, dust generation shall be minimized by applying water or by presoaking work areas for all work within 30 feet of elderberry bushes. Proof of compliance shall be submitted to the Wheatland Community Development Department.* Pallid Bat *4.6-7* *Prior to any construction activities that may impact pallid bat habitat (e.g., mature trees), a qualified biologist shall conduct a bat habitat assessment for suitable bat roosting habitat. The results of the survey shall be submitted to the City of Wheatland Community Development Department. If suitable roosting habitat is not identified, further measures are unnecessary. If suitable roosting habitat and/or signs of bat use are identified during the assessment, the roosting habitat shall be avoided to*	

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		the extent possible, and the following measures shall be implemented: • *If suitable roosting habitat and/or signs of bat use are identified in a tree or other habitat structure that must be removed, a qualified biologist shall conduct a night emergence survey within 14 days prior to habitat removal to determine if bats are roosting. Visual emergence surveys shall be conducted 45 minutes prior to sunset and continue for two hours. The qualified biologist shall observe potential roosting features using ambient light conditions and/or night observation devices, when applicable, for exiting bats. Acoustic monitoring shall be conducted to collect bat echolocation calls to facilitate species identification. Emergence surveys shall not be conducted during the bat hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45°F or lower and rain is not over 0.5 inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period.* • *If occupied roosting habitat is found within 50 feet of proposed construction activities, a qualified biologist shall prepare a Bat Management Plan for CDFW's review and*	

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		approval prior to removal of the trees. The Bat Management Plan shall include specific methods and materials for passive exclusion of bats, and/or a two-step tree removal process, species-specific habitat replacement mitigation, and/or post-construction mitigation monitoring. If a maternity roost is located, the roost shall remain undisturbed until after the maternity season, or until a qualified biologist has determined the roost is no longer active. If bat roost mitigation is required, roost mitigation shall be installed as far in advance of the bat maternity season as possible, but at least than 30 days prior to roost removal. <u>Western Red Bat</u> *4.6-8 If the shrubs or trees proposed to be removed or trimmed are determined by a qualified bat biologist to be suitable day-roosting habitat for western red bat, then a qualified bat biologist shall prepare a Bat Management Plan. The Bat Management Plan shall include specific avoidance and minimization measures to reduce impacts to roosting western red bats, including requiring preconstruction acoustic surveys for western red bats, a preconstruction survey report including methods, results, and recommendations based on the acoustic survey, roost removal timing outside of the maternity and*	

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		hibernation seasons, non-disturbance buffers, methods and materials for bat deterrents, and/or species-specific habitat replacement mitigation as necessary and appropriate. The Bat Management Plan shall be submitted to CDFW and the Wheatland Community Development Department for approval prior to the removal of trees and shrubs. Swainson's Hawk *4.6-9 If construction activities occur between March 1 to August 31, a qualified biologist shall conduct a preconstruction survey for Swainson's hawks' nests on-site and in a 0.25-mile buffer around the project site within 14 days prior to the start of ground- or vegetation-disturbing activities. The results of the survey shall be submitted to the City of Wheatland Community Development Department. Any active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.* *4.6-10 Prior to the commencement of ground-disturbing activities, the project applicant shall consult with CDFW to determine mitigation for loss of on-site Swainson's hawk foraging habitat, which consists of the disturbed grassland and agricultural areas on-site. Mitigation at a to-be-determined ratio based on*	

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		CDFW guidelines may be achieved through purchase of CDFW-approved mitigation bank credits. A report summarizing compliance with the provisions established herein shall be submitted to the City of Wheatland Community Development Department. <u>Burrowing Owl</u> *4.6-11 Prior to the commencement of ground-disturbing activities, a qualified biologist shall conduct a take avoidance preconstruction survey according to CDFW guidelines. The results of the survey shall be submitted to the City of Wheatland Community Development Department. If no burrowing owls or evidence are detected, no further measures are necessary.* *If active or occupied burrows are detected during the breeding season (February 1 through August 31), avoidance buffers shall be established in coordination with CDFW until the end of the breeding season. If active or occupied burrows are located within the project site and destruction is unavoidable, the project applicant shall develop a Burrowing Owl Exclusion Plan, which could include passive relocation according to CDFW guidelines. Upon CDFW review and approval of the Burrowing Owl Exclusion Plan, all measures contained therein shall be implemented.*	

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Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Tricolored Blackbird 4.6-12 *Within 30 days prior to the start of construction activities, a qualified biologist shall conduct a preconstruction survey for nesting tricolored blackbird on-site and within a 500-foot buffer around the project site. The results of the survey shall be submitted to the City of Wheatland Community Development Department. If active nesting colonies are not present, further measures are not necessary.* *If any active nesting colonies are observed, the nesting colony shall be designated a sensitive area and protected by an avoidance buffer of 500 feet, or as otherwise determined in coordination with CDFW. The avoidance buffer shall be maintained until a qualified biologist has determined that the young have fledged and the colony is no longer active. Monitoring of active nesting colony shall be conducted by a qualified biologist during construction activities, and avoidance buffers may be adjusted if any agitated behavior by the nesting birds is observed.* Nesting Raptors and Migratory Birds 4.6-13 *If construction activities begin during February 1 to September 30, a qualified biologist shall conduct a preconstruction nesting bird survey on-site and within a 500-foot buffer (for raptors) and a 100-foot buffer (for other non-raptor migratory birds) around*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
			the project site within 14 days prior to the start of ground- or vegetation-disturbing activities. If any active nests are observed, the nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or that the nest is otherwise no longer occupied. The results of the survey shall be submitted to the City of Wheatland Community Development Department.	
b. Have a substantial adverse effect on any riparian habitat or other Sensitive Natural Community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.	S	*4.6-14*	*Prior to the commencement of ground-disturbing activities, a qualified biologist shall conduct vegetation surveys within the project site and establish a 25-foot buffer to delineate Sensitive Natural Communities. If Sensitive Natural Communities are identified on-site, avoidance zones for Sensitive Natural Communities shall be established and clearly demarcated prior to construction. Avoidance zones shall include the extent of the Sensitive Natural Community plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. A qualified biologist or biological monitor shall be present if work must occur within the avoidance buffer to ensure Sensitive Natural Communities are not impacted by the work. Proof of compliance shall be submitted to the City of Wheatland Community Development Department for approval.*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
c. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	LS	*None required.*	N/A
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	LS	*None required.*	N/A
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	S	*4.6-15 Prior to commencement of ground-disturbing activities, including tree removal, a certified arborist shall prepare an arborist report documenting all trees with a diameter at breast height (DBH) of five inches or greater within the project site. The results of the arborist report shall be submitted to the City of Wheatland Community Development Department. If such oak trees are identified as a result of the arborist report, further measures shall be taken according to the Oak Woodlands Conservation Law, including the creation of an Oak Woodlands Management Plan, dedication of easements, or*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		other measures developed by the City of Wheatland, such as long-term cost-sharing incentive payments.	
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.	NI	*None required.*	N/A
4.6.5 Cultural Resources			
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	LS	*None required.*	N/A
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5. **c. Disturb any human remains, including those interred outside of dedicated cemeteries.**	S	*4.6-16 Prior to commencement of any construction activities, a Contractor Awareness Training Program shall be delivered to train equipment operators about cultural resources. The program shall be designed to inform construction personnel about: federal and State regulations pertaining to cultural resources and tribal cultural resources; the subsurface indicators of resources that shall require a work stoppage; procedures for notifying the City of Wheatland of any occurrences; project-specific requirements and mitigation measures; and enforcement of penalties and repercussions for non-compliance with the program.*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		The training shall be prepared by a qualified professional archaeologist and may be provided either through a brochure, video, or in-person tailgate meeting, as determined appropriate by the archaeologist. The training shall be provided to all construction supervisors, forepersons, and operators of ground-disturbing equipment. All personnel shall be required to sign a training roster. The construction manager is responsible for ensuring that all required personnel receive the training. The construction manager shall provide a copy of the signed training roster to the City of Wheatland as proof of compliance. *4.6-17 Prior to the start of trenching activity, the project applicant shall retain a qualified professional archaeologist to monitor all trenching activities and any below-ground utility installation associated with project construction. Monitoring is not required for placement of equipment or fill inside excavations that were monitored, above-ground construction activities, or redistribution of soils that were previously monitored (such as the return of stockpiles to use in backfilling).* *The monitoring archaeologist shall meet or work under the direct supervision of someone meeting the Secretary of the Interior's professional qualifications standards for prehistoric and historic archaeology.*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		The monitoring archaeologist shall have the authority to temporarily halt ground-disturbing or construction-related work within 100 feet of any discovery of potential historical or archaeological resources in order to address unanticipated discoveries. Proof of compliance with this mitigation measure shall be submitted to the Wheatland Community Development Department. *4.6-18 The following requirements shall be included through a notation on all project improvement plans prior to the issuance of grading permits and shall be implemented during project construction, to the satisfaction of the City Engineer:* *In the event subsurface deposits believed to be cultural or human in origin are discovered during construction, all work shall halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for precontact and historic archaeologists, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		- *If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and agency notifications are not required.* - *If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the City of Wheatland and applicable landowner. The Office of Historic Preservation (OHP) shall be consulted on a finding of eligibility and appropriate treatment measures shall be implemented, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Appropriate treatment measures that preserve or restore the character and integrity of a find may be, but are not limited to, processing materials for reburial, minimizing handling of historical objects, leaving objects in place within the landscape, construction monitoring of further construction activities, and/or returning objects to a location within the project area where they will not be subject to future impacts. Work shall not resume within the no-work radius until the determination is made through consultation, as appropriate, that the*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		site either: 1) is not a historical resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to the City's satisfaction. • *If the find includes human remains, or remains that are potentially human, the professional archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the City of Wheatland and the Yuba County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner shall notify the NAHC, which then shall designate a Native American Most Likely Descendant (MLD) for the proposed project (Section 5097.98 of the PRC). The designated MLD shall have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		NAHC shall mediate (Section 5097.94 of the PRC). If an agreement is not reached, the landowner shall rebury the remains where they shall not be further disturbed (Section 5097.98 of the PRC). The burial shall also include either recording the site with the NAHC or the appropriate information center, using an open space or conservation zoning designation or easement, or recording a reintenment document with Yuba County (AB 2641). Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.	
4.6.6 Energy			
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. **b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.**	LS	*None required.*	N/A

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.6.7 Geology and Soils			
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: **i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42;** **ii. Strong seismic ground shaking.**	LS	*None required.*	N/A
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: **iii. Seismic-related ground failure, including liquefaction;** **iv. Landslides.**	S	*4.6-19 Prior to issuance of any grading permits, the project applicant shall submit to the City of Wheatland Engineer, for review and approval, a design-level geotechnical exploration study produced by a California Registered Civil Engineer or Geotechnical Engineer and identify grading and building practices necessary to achieve compliance with the latest adopted edition of the California Building Standards Code's geologic, soils, and seismic requirements.*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
c.	**Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.**			*The design-level geotechnical exploration study shall include additional soil borings and sampling, laboratory testing. The design-level geotechnical exploration study shall present the geotechnical engineering conclusions and specific recommendations for site preparation, foundation design, slab support, sound-wall foundations, site drainage, and pavement design. The City Engineer shall ensure that all recommendations specified in the design-level geotechnical exploration study are properly incorporated and utilized in the project design.*	
b.	**Result in substantial soil erosion or the loss of topsoil.**	LS	*None required.*		N/A
d.	**Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.**	S	*4.6-20*	*Implement Mitigation Measure 4.6-19.*	LS
e.	**Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.**	NI	*None required.*		N/A
f.	**Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.**	S	*4.6-21*	*Should paleontological resources be discovered during ground-disturbing activities, work shall be halted in the area within 50 feet of the find. The City of Wheatland Community Development Department*	LS

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures		Level of Significance After Mitigation
			shall be notified and a qualified paleontologist shall be retained to inspect the discovery. If deemed significant under criteria established by the Society for Vertebrate Paleontology with respect to authenticity, completeness, preservation, and identification, the resource(s) shall then be salvaged and deposited in an accredited and permanent scientific institution (e.g., University of California Museum of Paleontology [UCMP]), where the discovery would be properly curated and preserved for the benefit of current and future generations. Construction may continue in areas outside of the buffer zone. The language of this mitigation measure shall be included on any future grading plans, utility plans, and improvement plans approved by the City of Wheatland Community Development Department for the proposed project, where ground-disturbing work would be required.	
4.6.8 Hazards and Hazardous Materials				
a. **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**	LS	*None required.*		N/A
b. **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely**	S	*4.6-22*	*Prior to approval of grading permits, the project applicant shall ensure that additional testing of on-site soils is conducted for the presence of organochlorine pesticides (OCPs), asbestos-containing materials (ACMs) and lead-based paints*	LS

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
release of hazardous materials into the environment.		*(LBPs) to determine both the lateral and vertical extent of the potential contamination. Soil samples shall be collected in areas previously used for agricultural purposes for the testing of OCPs, and in areas associated with the previous unidentified structure for the testing of ACMs and LBPs. The testing shall be conducted in accordance with U.S. Environmental Protection Agency (USEPA) Method 8081A for OCPs, USEPA Method 600/R-93/116 for ACMs, and USEPA Method 6010B for lead. Where the concentrations exceed the applicable California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Screening Levels, the soil shall be excavated, and that portion of material may be transported, and disposed of off-site at an appropriate Class I or Class II facility permitted by DTSC, or other options implemented as deemed satisfactory to Yuba County Environmental Health Department (YCEHD) and/or DTSC. The results of soil sampling and analysis, as well as verification of proper remediation and disposal, shall be submitted to the City of Wheatland Community Development Department for review and approval. Any remediation shall be completed prior to acceptance of the site improvements.* *4.6-23 Prior to improvement plan approval, the project applicant shall hire a licensed well contractor to obtain a well abandonment permit from the YCEHD*	

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		for all on-site wells not proposed for use, and properly abandon the on-site wells, pursuant to Department of Water Resources Bulletin 74-81 (Water Well Standards, Part III). A report verifying abandonment of the on-site wells in compliance with Bulletin 74-81 shall be submitted for review and approval to the YCEHD and City of Wheatland Community Development Department.	
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LS	*None required.*	N/A
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.	NI	*None required.*	N/A
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive	LS	*None required.*	N/A

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Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
noise for people residing or working in the project area.			
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LS	*None required.*	N/A
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires.	LS	*None required.*	N/A
4.6.9 Hydrology and Water Quality			
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	S	*4.6-24 Prior to issuance of any grading permits, the contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) for review and approval by the Central Valley Regional Water Quality Control Board (RWQCB). The contractor shall file the Notice of Intent (NOI) and associated fee to the State Water Resources Control Board (SWRCB). The SWPPP shall serve as the framework for identification, assignment, and implementation of Best Management Practices (BMPs). The contractor shall implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable. Construction (temporary) BMPs for the project may include, but are not limited to: fiber rolls, straw bale barrier, straw wattles, storm drain inlet protection, velocity dissipation devices, silt fences, wind erosion control, stabilized construction entrance,*	LS

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		hydroseeding, revegetation techniques, and dust control measures. The SWPPP shall be submitted to the City Engineer for review and approval and shall remain on the project site during all phases of construction. Following implementation of the SWPPP, the contractor shall subsequently demonstrate the SWPPP's effectiveness and provide for necessary and appropriate revisions, modifications, and improvements to reduce pollutants in stormwater discharges to the maximum extent practicable. *4.6-25 Prior to approval of final project improvement plans, a detailed BMP and water quality maintenance plan shall be submitted to the City Engineer for review and approval. The BMP and water quality maintenance plan shall meet the standards of the City's Unregulated Small Traditional MS4 Permit, and the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment. Site design measures, source control measures, hydromodification management, and Low Impact Development (LID) standards, as necessary, shall be incorporated into the design and shown on the improvement plans.*	
b. Substantially decrease groundwater supplies or interfere substantially with	LS	*None required.*	N/A

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
groundwater recharge such that the project may impede sustainable groundwater management of the basin. **e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.**			
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: **i. Result in substantial erosion or siltation on- or off-site;** **ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.**	LS	*None required.*	N/A
c. Substantially alter the existing drainage pattern of the site or	S	*4.6-26 Prior to construction of the foundation or at the completion of final grading, whichever comes first,*	LS

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area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: **iv. Impede or redirect flood flows.**		*project improvement plans shall show that all finished building pad elevations at the site shall be a minimum of one foot above the 100-year BFE, in accordance with Section 15.20.150 of the City of Wheatland Municipal Code. Project improvement plans shall be submitted to the City Engineer for review and approval.* *The final pad elevation shall be certified by a California registered civil engineer or licensed land surveyor and submitted to the City Engineer and Floodplain Manager for review and approval. Building construction shall not occur until the certification has been received and approved. Benchmark elevation and location shall be shown on the improvement plans to the satisfaction of the City of Wheatland Engineering Department.* *4.6-27 Prior to issuance of building permits, a Hydrology Study must be submitted to the City Engineer demonstrating the project's compliance with all relevant sections of the City's Municipal Code and applicable federal standards (such as those established by FEMA). Compliance with FEMA standards may include obtaining a Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Revision based on Fill (CLOMR-F) for fill within a Special Flood Hazard Area, if required. A copy of the letter shall be provided to the Engineering and*	

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Surveying Division. A Letter of Map Revision (LOMR), or a Letter of Map Revision based on Fill (LOMR-F) from FEMA shall be submitted to the City's Engineer prior to acceptance of project improvements as complete.	
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	LS	*None required.*	N/A
4.6.10 Land Use and Planning			
a. Physically divide an established community.	LS	*None required.*	N/A
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LS	*None required.*	N/A
4.6.11 Mineral Resources			
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. **b. Result in the loss of availability of a locally important mineral**	NI	*None required.*	N/A

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Summary of Impacts and Mitigation Measures

Impact		Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
	resource recovery site delineated on a local general plan, specific plan or other land use plan.			
		4.6.12 Population and Housing		
a.	**Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of major roads or infrastructure).**	LS	*None required.*	N/A
b.	**Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.**	NI	*None required.*	N/A
		4.6.13 Public Services		
a. **b.**	**Fire protection** **Police protection**	LS	*None required.*	N/A
c.	**Schools**	LS	*None required.*	N/A
d.	**Parks**	LS	*None required.*	N/A
e.	**Other Public facilities**	LS	*None required.*	N/A
		4.6.14 Recreation		
a.	**Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial**	LS	*None required.*	N/A

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
physical deterioration of the facility would occur or be accelerated. **b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.**			
4.6.15 Wildfire			
a. Substantially impair an adopted emergency response plan or emergency evacuation plan. **b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.** **c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other**	LS	*None required.*	N/A

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Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. **d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.**			

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3. Project Description

3. PROJECT DESCRIPTION

3.1 INTRODUCTION AND BACKGROUND

The Project Description chapter of this EIR provides a comprehensive description of the Heritage Oaks Estates East Project in accordance with CEQA Guidelines Section 15124. A detailed description of the project location, project setting and surrounding uses, project objectives, project components, and required project approvals is presented in this chapter. A discussion of the project background is provided below.

3.2 PROJECT LOCATION

The approximately 148.70-acre project site, identified by Assessor's Parcel Numbers (APNs) 015-490-023 through -028 and 015-720-009 through -013, is located west of State Route (SR) 65 and south of Main Street in the City of Wheatland, California, and is currently undeveloped (see Figure 3-1 and Figure 3-2). The City of Wheatland General Plan designates the site as Low Density Residential (LDR) and Park, and the project site is zoned Planned Development (PD).

3.3 PROJECT SETTING AND SURROUNDING USES

The following sections provide discussions of the project site's setting and surrounding land uses.

Project Site Setting

The project site consists of generally flat, vacant land that has been subject to prior mass grading and ongoing disturbance through regular mowing activities. Malone Avenue runs in a northwest-to-southeast direction through the northern portion of the project site and continues to travel southeast as a portion of the project site's western boundary. Various trees and shrubs are scattered throughout the southern portion of the project site.

Surrounding Land Uses

Surrounding existing uses include the Grasshopper Slough, single-family residences, multi-family residences, and commercial uses to the north; Union Pacific Railroad (UPRR) tracks and agricultural land to the east, across SR 65; Bear River, the City of Wheatland Wastewater Treatment Plant (WWTP), and agricultural land to the south; and agricultural land, undeveloped land, and Bishop's Pumpkin Farm to the west. The majority of the project site's eastern boundary is adjacent to SR 65; however, the central portion of the site along the eastern boundary is separated from SR 65 by agricultural land.

Project Site Background

An EIR was originally prepared in 2002 for the entire Heritage Oaks Estates project, which included the project site as well as the 92-acre Heritage Oaks Estates West site. The 2002 project required approval of Annexation of both sites into the City of Wheatland, a General Plan Amendment, and a Rezone. The Heritage Oaks Estates site was later divided into Heritage Oaks Estates West and Heritage Oaks Estates East projects. An Initial Study (IS) was prepared for the Heritage Oaks Estates East project in 2005.

Figure 3-1
Regional Vicinity Map

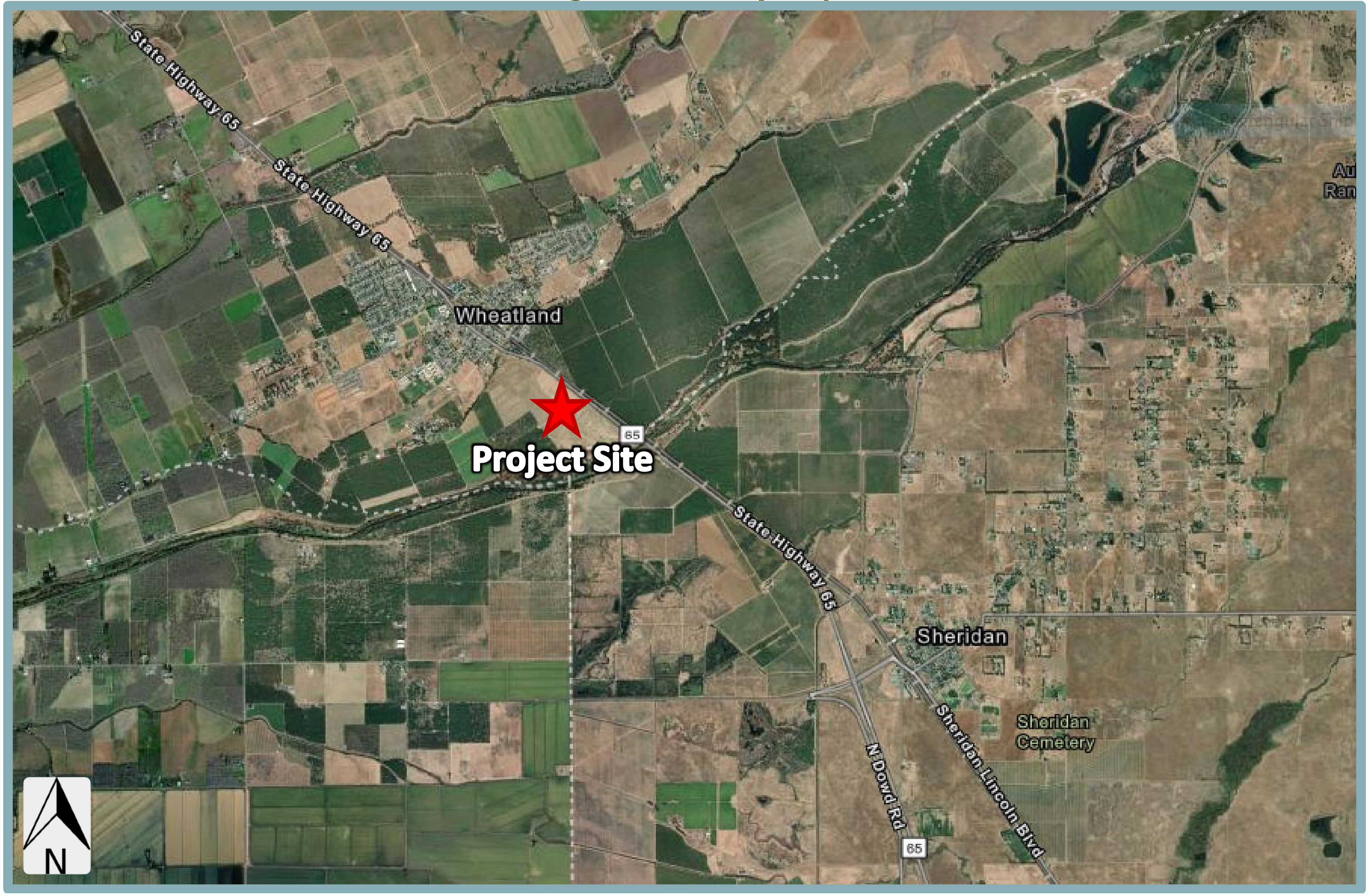
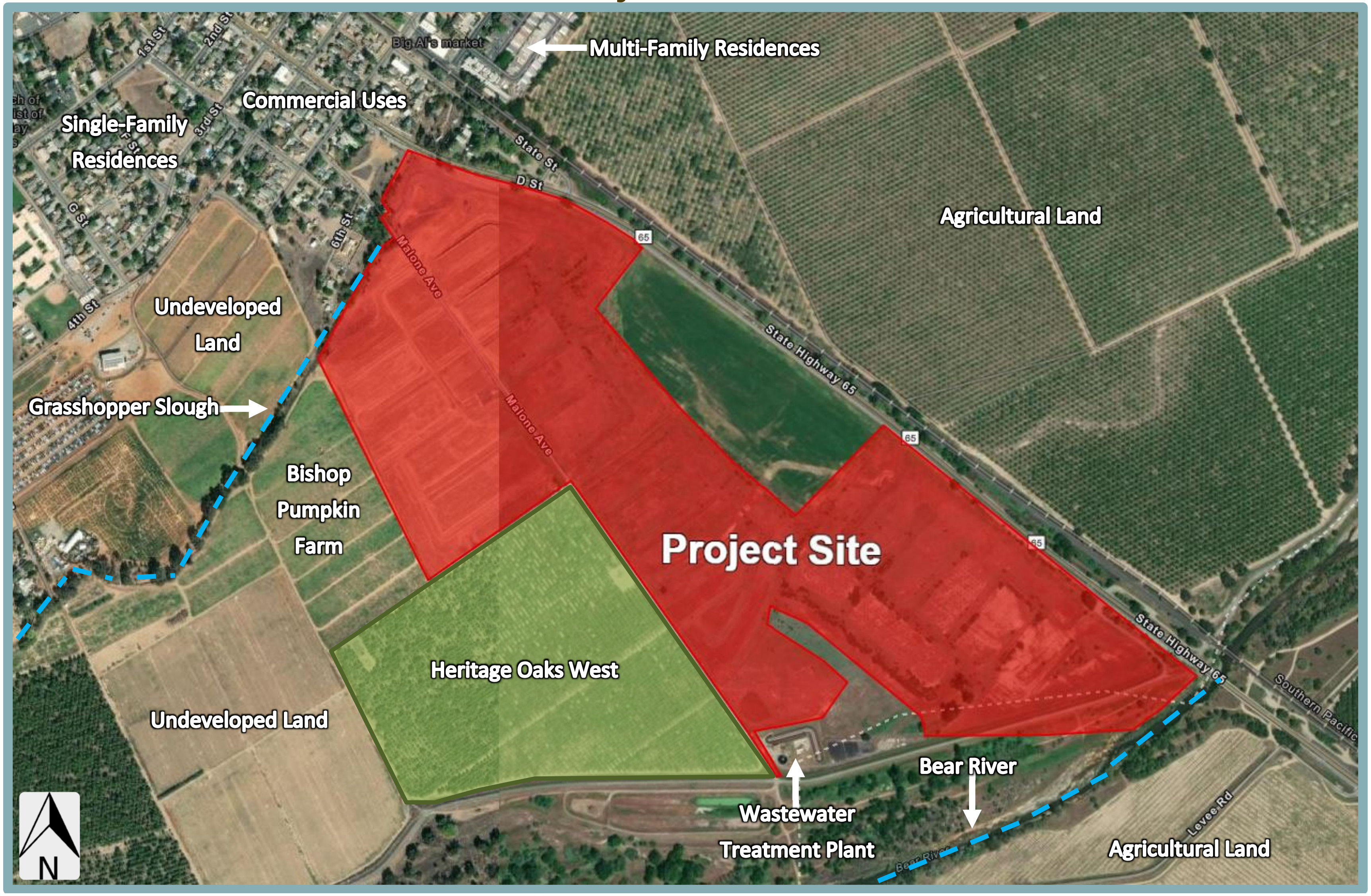


Figure 3-2
Project Location



The City of Wheatland City Council approved a Development Agreement and Tentative Subdivision Map for the Heritage Oaks Estates East project; however, both entitlements have since expired. This EIR will only include an analysis of the Heritage Oaks Estates East project site.

3.4 PROJECT OBJECTIVES

The following objectives have been developed by the project applicant for the proposed project:

1. Provide a variety and diverse mix of housing opportunities at a broad range of new home sales price points.
2. Respect the small-town character of the City by designing distinct connected neighborhoods that foster a strong sense of community.
3. Create new recreational amenities including active and passive parks, pedestrian and bicycle trails, and by preserving open space areas adjacent to the Bear River.
4. Establish a high standard of design for the residential and landscape architecture with guidelines and development standards to ensure a quality and sustainable community.
5. Construct new public infrastructure to serve the new community, including roadways and water, wastewater, and drainage utilities.
6. Participate in the City public infrastructure and capital facilities program through the payment of development impact fees and/or the construction of required capital facilities improvements.
7. Enhance transportation circulation within the City by providing new roadways connecting to properties to the west of the community, and pedestrian and bicycle trail connectivity to the north of the community.
8. Increase opportunities for new retail development and employment opportunities by providing new housing and residents in the City.
9. Ensure costs for maintaining the landscape and public facilities within the new community are funded by the new homeowners within the new community.
10. Generate new property tax and sales tax revenue to support and enhance public services within the City.

3.5 PROJECT COMPONENTS

The proposed project would generally include the development of the project site with up to 685 single-family residences, as well as various associated improvements, including, but not limited to, several community parks, a landscape corridor, open space, an internal roadway system, and various landscaping and utility improvements.

The proposed project would require City approval of a General Plan Amendment, Rezone and associated General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review, as discussed below. It should be noted that the proposed Vesting Tentative Subdivision Map currently includes 681 proposed units; however, all entitlements are based on a maximum of 685 units. Therefore, this EIR evaluates up to 685 proposed units.

General Plan Amendment

Due to the project's proposed lot sizes, the proposed project would require approval of a General Plan Amendment to change the site's designation from LDR to Low-Medium Density Residential (LMDR) and Medium Density Residential (MDR). The LMDR designation provides for single-family detached residences, secondary residential units, public and quasi-public uses, and similar compatible uses within a density range of 4.1 to 6.0 dwelling units per acre (du/ac). The MDR land use designation provides for the same residential uses, as well as single-family attached residences, within a density range of 6.1 to 8.0 du/ac. The net density of the residential villages would be 6.51 du/ac, while the gross density based on the total acreage would be 4.58 du/ac.

Rezone and General Development Plan

The proposed project would require approval of a Rezone to amend the PD zoning district and establish site-specific development standards. Pursuant to Section 18.51.060 of the Wheatland Municipal Code, the uses within the PD zoning district shall be limited to the uses contained within the approved development plan and pre-existing uses, as defined by Chapter 18.70 of the Municipal Code. Accordingly, the Heritage Oaks Wheatland General Development Plan has been prepared to establish the design standards for the site with specific criteria to assist the City in its review of the proposed project. Unless otherwise specified within the General Development Plan, such as variations in lot sizes and setback lengths, the proposed project would adhere to all applicable City zoning and Municipal Code requirements. Such standards and regulations are designed to reflect site characteristics, as well as establish development and design objectives that differ from the City's typical development standards for the proposed on-site uses.

Vesting Tentative Subdivision Map

The proposed project would include a Vesting Tentative Subdivision Map, which entitles the project applicant to a vested right to proceed with development in substantial compliance with the ordinances, policies, and standards in place at the time of project approval. The proposed Vesting Tentative Subdivision Map includes subdivision of the project site into 681 single-family residential lots (see Figure 3-3). The single-family residential lots would be grouped into 10 "villages," which would each include between 35 and 101 lots. A summary of each village's lot sizing, acreage, number of lots, and density is included in Table 3-1 below. It should be noted that, for conservative purposes, the environmental analysis for the proposed project will be based on development of up to 685 residential units.

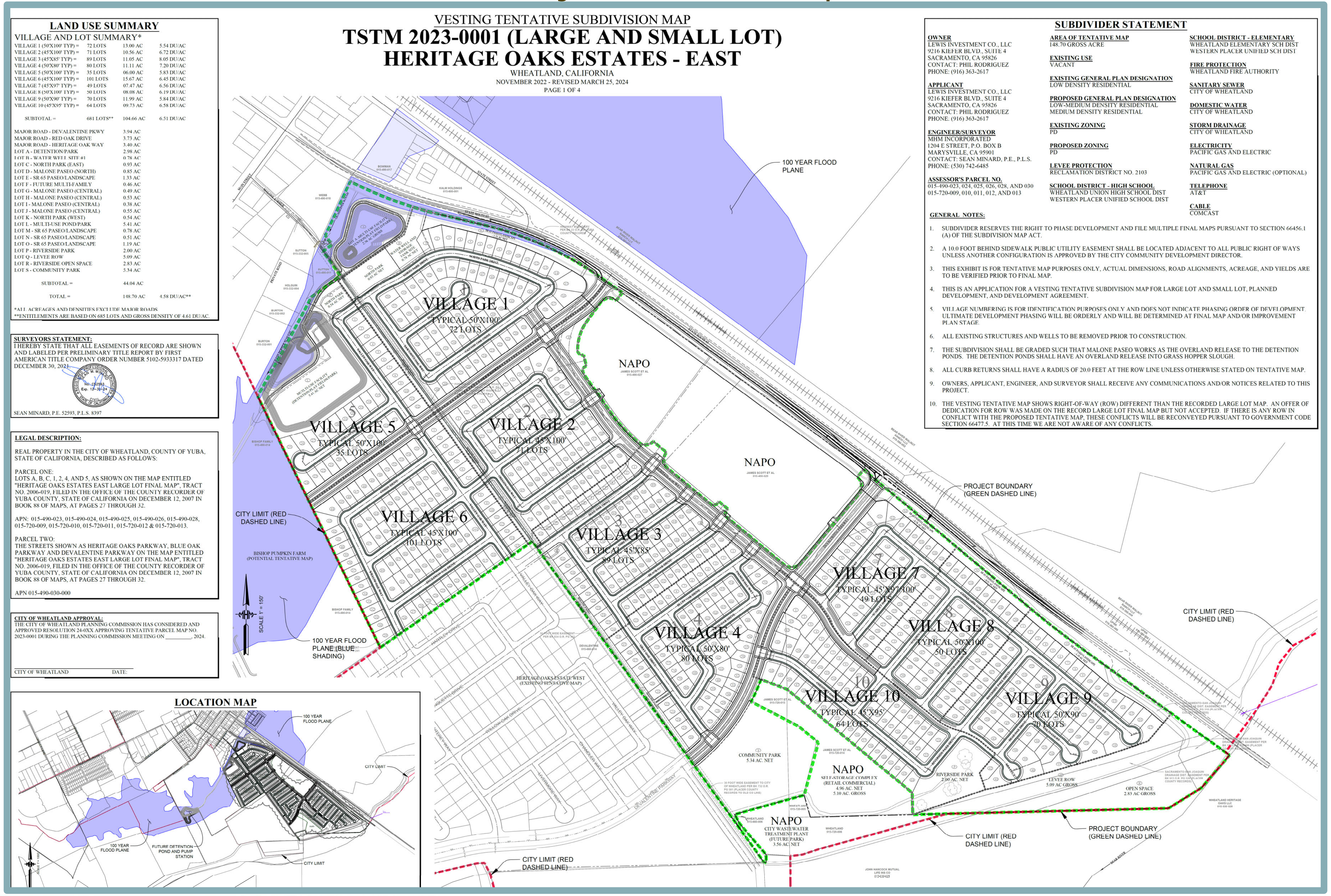
Table 3-1
Proposed Residential Uses

Village	Typical Lot Dimensions (feet)	Typical Lot Size (sf)	Number of Lots	Acreage	Density (du/ac)
1	50 x 100	5,000	72	13.00	5.54
2	45 x 100	4,500	71	10.56	6.72
3	45 x 85	3,825	89	11.05	8.05
4	50 x 80	4,000	80	11.11	7.20
5	50 x 100	5,000	35	6.00	5.84
6	45 x 100	4,500	101	15.67	6.45
7	45 x 97	4,365	49	7.47	6.56
8	50 x 100	5,000	50	8.08	6.19
9	50 x 90	4,500	70	11.99	5.84
10	45 x 95	4,275	64	9.67	6.58
Totals		**44,965**	**681**	**104.66**[1]	**6.51**

[1] The remaining site acreage would be developed with various landscaping, roadway, and utility improvements, as discussed below.

The components of the Vesting Tentative Subdivision Map proposed for the Heritage Oaks Estates East Project are discussed further below.

Figure 3-3
Vesting Tentative Subdivision Map



VESTING TENTATIVE SUBDIVISION MAP

TSTM 2023-0001 (LARGE AND SMALL LOT)
HERITAGE OAKS ESTATES - EAST
WHEATLAND, CALIFORNIA
NOVEMBER 2022 - REVISED MARCH 25, 2024
PAGE 1 OF 4

LAND USE SUMMARY

VILLAGE AND LOT SUMMARY*

VILLAGE 1 (50'X100' TYP) =	72 LOTS	13.00 AC	5.54 DU/AC
VILLAGE 2 (45'X100' TYP) =	71 LOTS	10.56 AC	6.72 DU/AC
VILLAGE 3 (45'X85' TYP) =	89 LOTS	11.05 AC	8.05 DU/AC
VILLAGE 4 (50'X80' TYP) =	80 LOTS	11.11 AC	7.20 DU/AC
VILLAGE 5 (50'X100' TYP) =	35 LOTS	06.00 AC	5.83 DU/AC
VILLAGE 6 (45'X100' TYP) =	101 LOTS	15.67 AC	6.45 DU/AC
VILLAGE 7 (45'X97' TYP) =	49 LOTS	07.47 AC	6.56 DU/AC
VILLAGE 8 (50'X100' TYP) =	50 LOTS	08.08 AC	6.19 DU/AC
VILLAGE 9 (50'X90' TYP) =	70 LOTS	11.99 AC	5.84 DU/AC
VILLAGE 10 (45'X95' TYP) =	64 LOTS	09.73 AC	6.58 DU/AC
SUBTOTAL =	681 LOTS**	104.66 AC	6.51 DU/AC
MAJOR ROAD - DEVALENTINE PKWY		3.94 AC	
MAJOR ROAD - RED OAK DRIVE		3.73 AC	
MAJOR ROAD - HERITAGE OAK WAY		3.40 AC	
LOT A - DETENTION/PARK		2.98 AC	
LOT B - WATER WELL SITE #1		0.78 AC	
LOT C - NORTH PARK (EAST)		0.93 AC	
LOT D - MALONE PASEO (NORTH)		0.85 AC	
LOT E - SR 65 PASEO/LANDSCAPE		1.33 AC	
LOT F - FUTURE MULTI-FAMILY		0.46 AC	
LOT G - MALONE PASEO (CENTRAL)		0.49 AC	
LOT H - MALONE PASEO (CENTRAL)		0.53 AC	
LOT I - MALONE PASEO (CENTRAL)		0.38 AC	
LOT J - MALONE PASEO (CENTRAL)		0.55 AC	
LOT K - NORTH PARK (WEST)		0.54 AC	
LOT L - MULTI-USE POND/PARK		5.41 AC	
LOT M - SR 65 PASEO/LANDSCAPE		0.78 AC	
LOT N - SR 65 PASEO/LANDSCAPE		0.51 AC	
LOT O - SR 65 PASEO/LANDSCAPE		1.19 AC	
LOT P - RIVERSIDE PARK		2.00 AC	
LOT Q - LEVEE ROW		5.09 AC	
LOT R - RIVERSIDE OPEN SPACE		2.83 AC	
LOT S - COMMUNITY PARK		5.34 AC	
SUBTOTAL =		44.04 AC	
TOTAL =		148.70 AC	4.58 DU/AC**

*ALL ACREAGES AND DENSITIES EXCLUDE MAJOR ROADS.
**ENTITLEMENTS ARE BASED ON 685 LOTS AND GROSS DENSITY OF 4.61 DU/AC.

SURVEYORS STATEMENT:
I HEREBY STATE THAT ALL EASEMENTS OF RECORD ARE SHOWN AND LABELED PER PRELIMINARY TITLE REPORT BY FIRST AMERICAN TITLE COMPANY ORDER NUMBER 5102-5933317 DATED DECEMBER 30, 2021.

SEAN M. MINARD
No. C52593
Exp. 12-31-24

SEAN MINARD, P.E. 52593, P.L.S. 8397

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF WHEATLAND, COUNTY OF YUBA, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL ONE:
LOTS A, B, C, 1, 2, 4, AND 5, AS SHOWN ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STATE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

APN: 015-490-023, 015-490-024, 015-490-025, 015-490-026, 015-490-028, 015-720-009, 015-720-010, 015-720-011, 015-720-012 & 015-720-013.

PARCEL TWO:
THE STREETS SHOWN AS HERITAGE OAKS PARKWAY, BLUE OAK PARKWAY AND DEVALENTINE PARKWAY ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STATE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

APN 015-490-030-000

CITY OF WHEATLAND APPROVAL:
THE CITY OF WHEATLAND PLANNING COMMISSION HAS CONSIDERED AND APPROVED RESOLUTION 24-0XX APPROVING TENTATIVE PARCEL MAP NO. 2023-0001 DURING THE PLANNING COMMISSION MEETING ON __________, 2024.

CITY OF WHEATLAND ______________ DATE:

SUBDIVIDER STATEMENT

OWNER
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

APPLICANT
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

ENGINEER/SURVEYOR
MHM INCORPORATED
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
CONTACT: SEAN MINARD, P.E., P.L.S.
PHONE: (530) 742-6485

ASSESSOR'S PARCEL NO.
015-490-023, 024, 025, 026, 028, AND 030
015-720-009, 010, 011, 012, AND 013

AREA OF TENTATIVE MAP
148.70 GROSS ACRE

EXISTING USE
VACANT

EXISTING GENERAL PLAN DESIGNATION
LOW DENSITY RESIDENTIAL

PROPOSED GENERAL PLAN DESIGNATION
LOW-MEDIUM DENSITY RESIDENTIAL
MEDIUM DENSITY RESIDENTIAL

EXISTING ZONING
PD

PROPOSED ZONING
PD

LEVEE PROTECTION
RECLAMATION DISTRICT NO. 2103

SCHOOL DISTRICT - HIGH SCHOOL
WHEATLAND UNION HIGH SCHOOL DIST
WESTERN PLACER UNIFIED SCHOOL DIST

SCHOOL DISTRICT - ELEMENTARY
WHEATLAND ELEMENTARY SCH DIST
WESTERN PLACER UNIFIED SCH DIST

FIRE PROTECTION
WHEATLAND FIRE AUTHORITY

SANITARY SEWER
CITY OF WHEATLAND

DOMESTIC WATER
CITY OF WHEATLAND

STORM DRAINAGE
CITY OF WHEATLAND

ELECTRICITY
PACIFIC GAS AND ELECTRIC

NATURAL GAS
PACIFIC GAS AND ELECTRIC (OPTIONAL)

TELEPHONE
AT&T

CABLE
COMCAST

GENERAL NOTES:

1. SUBDIVIDER RESERVES THE RIGHT TO PHASE DEVELOPMENT AND FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.1 (A) OF THE SUBDIVISION MAP ACT.
2. A 10.0 FOOT BEHIND SIDEWALK PUBLIC UTILITY EASEMENT SHALL BE LOCATED ADJACENT TO ALL PUBLIC RIGHT OF WAYS UNLESS ANOTHER CONFIGURATION IS APPROVED BY THE CITY COMMUNITY DEVELOPMENT DIRECTOR.
3. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY, ACTUAL DIMENSIONS, ROAD ALIGNMENTS, ACREAGE, AND YIELDS ARE TO BE VERIFIED PRIOR TO FINAL MAP.
4. THIS IS AN APPLICATION FOR A VESTING TENTATIVE SUBDIVISION MAP FOR LARGE LOT AND SMALL LOT, PLANNED DEVELOPMENT, AND DEVELOPMENT AGREEMENT.
5. VILLAGE NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING WILL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.
6. ALL EXISTING STRUCTURES AND WELLS TO BE REMOVED PRIOR TO CONSTRUCTION.
7. THE SUBDIVISION SHALL BE GRADED SUCH THAT MALONE PASEO WORKS AS THE OVERLAND RELEASE TO THE DETENTION PONDS. THE DETENTION PONDS SHALL HAVE AN OVERLAND RELEASE INTO GRASS HOPPER SLOUGH.
8. ALL CURB RETURNS SHALL HAVE A RADIUS OF 20.0 FEET AT THE ROW LINE UNLESS OTHERWISE STATED ON TENTATIVE MAP.
9. OWNERS, APPLICANT, ENGINEER, AND SURVEYOR SHALL RECEIVE ANY COMMUNICATIONS AND/OR NOTICES RELATED TO THIS PROJECT.
10. THE VESTING TENTATIVE MAP SHOWS RIGHT-OF-WAY (ROW) DIFFERENT THAN THE RECORDED LARGE LOT MAP. AN OFFER OF DEDICATION FOR ROW WAS MADE ON THE RECORD LARGE LOT FINAL MAP BUT NOT ACCEPTED. IF THERE IS ANY ROW IN CONFLICT WITH THE PROPOSED TENTATIVE MAP, THESE CONFLICTS WILL BE RECONVEYED PURSUANT TO GOVERNMENT CODE SECTION 66477.5. AT THIS TIME WE ARE NOT AWARE OF ANY CONFLICTS.

LOCATION MAP

Access and Circulation

Site access would be provided by Malone Avenue, which runs in a northwest-to-southeast direction through the project site and continues to travel southeast as a portion of the project site's western boundary. The proposed project would also include development of two roadways, DeValentine Parkway and Red Oak Drive, which would connect to SR 65 at the project site's eastern boundary and provide two additional access points to the project site. In addition, the proposed project would include acceleration and deceleration access lanes along SR 65. The proposed internal collector streets would connect to form a semi-grid pattern within the project site and would provide access to the proposed residential units and parks.

The proposed project would include a multimodal network for pedestrians and bicyclists by way of the Malone Paseo trail corridor and SR 65 landscape corridor. Malone Paseo would provide an internal north-to-south connection between the proposed residential units along Malone Avenue. The corridor would include a 10-foot-wide meandering pathway for pedestrian and bicycle uses, and a landscape strip along one street edge. Sidewalk connections would also be provided throughout the site's internal roadway network.

Utilities

Water service would be provided by the City of Wheatland Public Works Department through the existing well located in the project site's 0.86-acre Parcel B, as well as through new water line connections to the City's existing water system. From the point of connection to the City's existing water lines in the project vicinity, such as those within Malone Avenue, new water lines would be extended into the project site within the project's new internal street network, to which the proposed residences would connect by way of new water laterals. The proposed project would also include a well pump station and storage tank in Parcel B, located immediately north of North Park Drive and west of Lot 1.

Sanitary sewer service would be provided by the City's Public Works Department through new connections to existing sewer infrastructure in the project vicinity. From the point of connection to the City's existing sewer conveyance system, such as the sewer lines within Malone Avenue, new sewer lines would be extended into the project site within the project's new internal street network, to which the proposed residences would connect by way of new sewer laterals.

The storm drainage system for the proposed project would consist of a new underground trunk line conveyance system and two detention basins. From the project site's new impervious surfaces, stormwater flows would be collected by drain inlets located along the internal street network and conveyed either from a new easterly trunk line to a new westerly trunk line, or directly to the westerly trunk line, with the exception of Villages 5 and 6. The new trunk lines would vary in diameter from 33 inches to 72 inches. From the westerly trunk line, flows would be conveyed for detention and treatment to an easterly and a westerly detention basin, which would be located to the east and west of Malone Avenue, respectively. It should be noted that the eastern detention basin was predominantly excavated as part of the mass grading of the site that occurred in 2006. The detention basins would be connected by way of a 48-inch storm drain line. From the west detention basin, peak flows would be metered to Grasshopper Slough through a gravity outfall structure. The outfall would be equipped with a flap gate at the slough to prevent backflow from the slough to the basin and a small five-cubic-feet-per-second pump to discharge water into the slough.

Gas and electricity services would be provided by the Pacific Gas and Electric Co. (PG&E), and telecommunications and cable services would be provided by AT&T and Xfinity. The proposed project would include new connections to existing infrastructure located in the vicinity of the project site.

Parks, Open Space, and Greenbelts

The proposed project would include approximately 25 acres of open space and recreational areas, including three parks, the Malone Paseo, and passive open space (see Figure 3-4). The three parks would range in size from approximately 2.0 to 9.9 acres.

The northernmost park would consist of lots A, C, K, and L, totaling approximately 9.9 acres, located adjacent to Grasshopper Slough. The park would be designed as a community park and include a play structure, lawn games, sport courts, and multi-use areas that would provide sports play field areas while also serving as a stormwater and water quality control basin.

An approximately two-acre park identified on the Vesting Tentative Subdivision Map as Riverside Park would be located adjacent to Villages 9 and 10 in the southern portion of the site and include preserved oak trees surrounded by benches and tables to create a picnic area. An approximately 5.1-acre park would be located between Village 4 and the WWTP, though the park may be expanded in the future following the repurposing of the WWTP. The park would be designed as a community park and include play structures, sports courts, and sports play fields. Approximately 7.9 acres of passive recreation area adjacent to the Bear River would be provided on lots Q and R, south of Village 9.

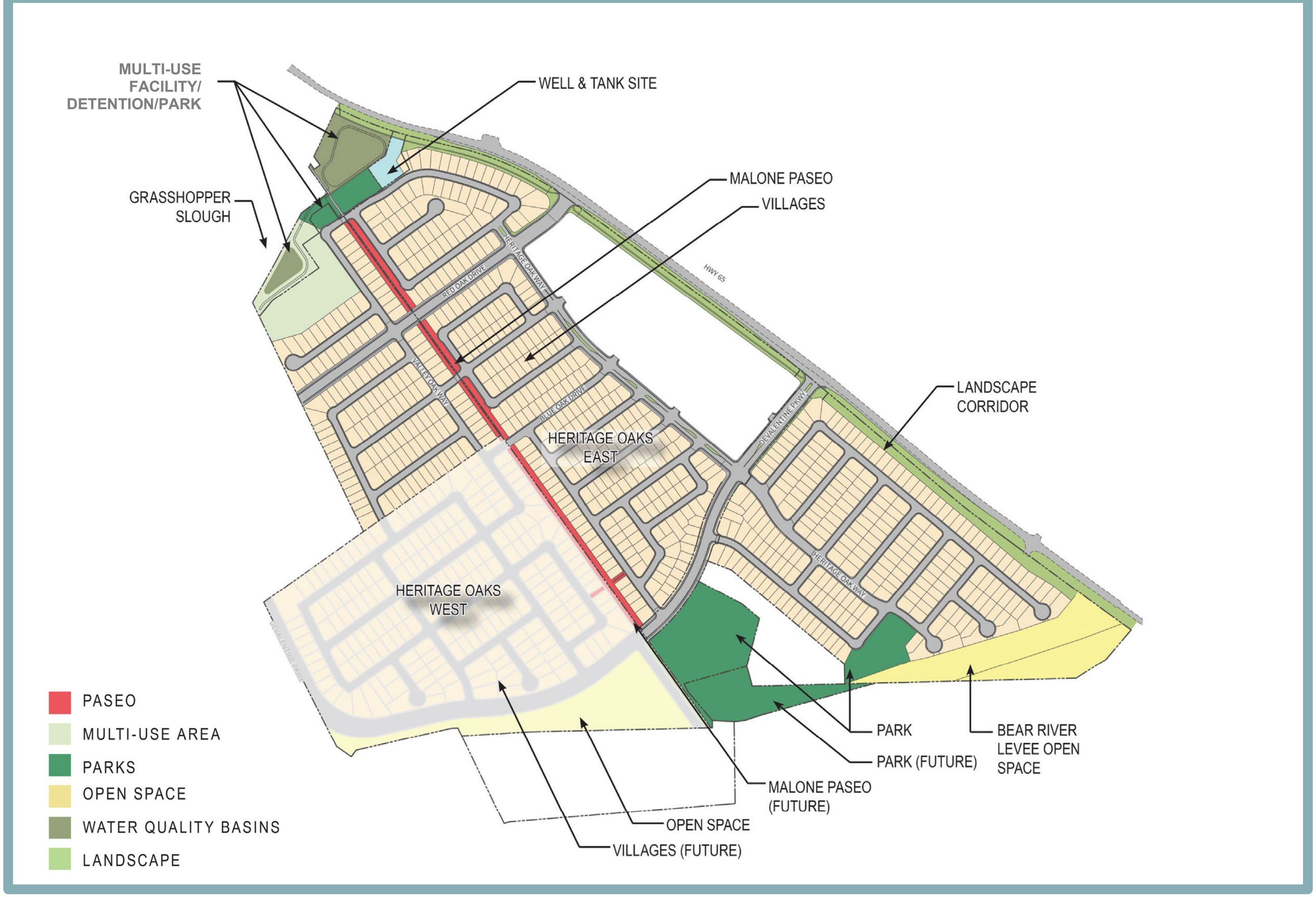
In addition, the proposed project would include the development of the approximately 2.80-acre Malone Paseo trail corridor, which would run adjacent to Malone Avenue throughout the central portion of the site to link the north and south villages. The paseo would include a 10-foot-wide meandering multi-use pathway and a landscape strip along one street edge. Furthermore, an approximately 4.62-acre landscape corridor located along SR 65 to the east would provide a buffer between the proposed residences and SR 65. The corridor would include a combination of landscaping and meandering sidewalks, as well as a six-foot concrete masonry wall.

Each residential lot would include front yard landscaping along the street between the front curb and the face of the residences with a minimum of one tree and one shrub. Residential lots with side yards adjacent to the public street or visible to the public would include a planter area along the private fencing. Turf from drought-resistant sod would be provided in areas of high visibility to provide a permanent green area within the landscaped yard.

Site Plan and Design Review

Pursuant to City of Wheatland Municipal Code Chapter 18.67, residential development projects with more than four units are subject to the City's Site Plan and Design Review process. The City's Site Plan and Design Review process allows various City departments or public agencies, such as the Fire District, City Engineer, Police Department, Building Department, Public Works, Planning Director, and any other affected City departments or public agencies, to evaluate the proposed project's compliance with the City of Wheatland's standards and regulations.

Figure 3-4
Parks and Paseos Map



3.6 PROJECT APPROVALS

The entitlements requested with the application for the proposed project include the following:

- General Plan Amendment from LDR to LMDR and MDR;
- Rezone to amend the PD zoning district and General Development Plan to establish site development standards;
- Vesting Tentative Subdivision Map; and
- Site Plan and Design Review.

4.0 Introduction to the Analysis

4.0 INTRODUCTION TO THE ANALYSIS

4.0.1 INTRODUCTION

The technical chapters of the Environmental Impact Report (EIR) analyze the potential impacts of buildout of the proposed project on Air Quality and Greenhouse Gas Emissions, Noise, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Other Effects. Chapters 4.1 through 4.5 of the EIR include the following: the environmental setting; standards of significance; method of analysis; and project-specific impacts and mitigation measures. Chapters 4.1 through 4.5 also describe the cumulative impacts of the project combined with past, present, and reasonably probable future projects for each issue area. The format of each of the technical chapters is described at the end of this chapter. Additionally, Chapter 4.6 addresses environmental issues that were determined by the City of Wheatland, as lead agency, to not be significant with development of the proposed project. It should be noted that all technical reports are either attached to this EIR or available at the City by request.

4.0.2 DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial or potentially substantial adverse change in the environment (Public Resources Code Section 21068). The California Environmental Quality Act (CEQA) Guidelines require that the determination of significance be based on scientific and factual data. The specific criteria for determining the significance of a particular impact are identified within the impact discussion in each technical chapter and are consistent with significance criteria set forth in the CEQA Guidelines or as based on the professional judgement of the EIR preparers.

Significance Criteria

The CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance." In addition, the Guidelines state, "An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant." (CEQA Guidelines Section 15382).

As presented in Section 4.0.4 below, the level of significance of an impact prior to mitigation is included at the end of each impact discussion throughout the technical chapters of this EIR. The following levels of significance prior to mitigation are used in this EIR:

1) Less than Significant: Impacts that may be adverse, but that do not exceed the specified thresholds of significance;
2) Significant: Impacts that exceed the defined standards of significance and require mitigation;
3) Less than Cumulatively Considerable: Where cumulative impacts have been identified, but the project's incremental contribution towards the cumulative impacts would not be considered significant; and

4) Cumulatively Considerable: Where cumulative impacts have been identified and the project's incremental contribution towards the cumulative impacts would be considered significant.

If an impact is determined to be significant or cumulatively considerable, mitigation is included, if available, in order to reduce the specific impact to the maximum extent feasible. A statement of the level of significance of an impact after mitigation is also included in each impact discussion throughout the technical chapters of this EIR. The following levels of significance after implementation of mitigation are used in the EIR:

1) Less than Significant: Impacts that exceed the defined standards of significance but can be eliminated or reduced to a less-than-significant level through the implementation of feasible mitigation measures;
2) Less than Cumulatively Considerable: Where the project's incremental contribution towards cumulative impacts would be eliminated or reduced to a less than cumulatively considerable level through the implementation of feasible mitigation measures; and
3) Significant and Unavoidable Impact: An impact (project-level or cumulative) that cannot be eliminated or reduced to less than significant or less than cumulatively considerable level through the implementation of feasible mitigations measures.

Each environmental area of analysis uses a distinct set of significance criteria. The significance criteria are identified at the beginning of the Impacts and Mitigation Measures section in Chapters 4.1 through 4.5. Although significance criteria are necessarily different for each resource considered, the provided significance levels ensure consistent evaluation of impacts for all resource areas evaluated.

4.0.3 ENVIRONMENTAL ISSUES ADDRESSED IN THIS EIR

The EIR provides the analysis necessary to address the environmental impacts of the proposed project. The following environmental issues are addressed in separate technical chapters in this EIR:

- Air Quality and Greenhouse Gas Emissions;
- Noise;
- Transportation;
- Tribal Cultural Resources;
- Utilities and Service Systems; and
- Other Effects (all other CEQA checklist sections).

Chapter 4.6, Other Effects, addresses the remaining environmental issue areas not discussed in an individual technical chapter of the EIR. See Section 5.3, Cumulative Impacts, of Chapter 5, Statutorily Required Sections, for additional information on the scope of the cumulative impact analysis for each environmental issue area addressed in the EIR.

4.0.4 TECHNICAL CHAPTER FORMAT

Each technical chapter addressing a specific environmental issue begins with an **introduction** describing the purpose of the section. The introduction is followed by a description of the project's **existing environmental setting** as the setting pertains to that particular issue. The setting description is followed by the **regulatory context** and the **impacts and mitigation measures** discussion, which contains the **standards of significance**, followed by the **method of analysis**.

The **impact and mitigation** discussion includes impact statements prefaced by a number in bold-faced type (for both project-level and cumulative analyses). An explanation of each impact and an analysis of the impact's significance follow each impact statement (see below), followed by all mitigation measures pertinent to each individual impact. The degree of relief provided by identified mitigation measures is also evaluated. An example of the format is shown below.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in comparison with the standards of significance.

4.x-1 Statement of Project-Specific Impact

Discussion of impact for the proposed project in paragraph format.

Statement of ***level of significance*** of impact prior to mitigation is included at the end of each impact discussion. The following levels of significance are used in the EIR: less than significant, significant, and no impact. If an impact is determined to be significant, mitigation will be included in order to reduce the specific impact to the maximum extent feasible. Impacts that cannot be reduced to a less than significant level with implementation of all feasible mitigation would be considered to remain significant and unavoidable.

Mitigation Measure(s)

Statement of *level of significance* after the mitigation is included immediately preceding mitigation measures.

4.x-1(a) *Required mitigation measure(s) presented in italics and numbered in consecutive order.*

4.x-1(b) *Required additional mitigation measure, if necessary.*

Cumulative Impacts and Mitigation Measures

The following discussion of cumulative impacts is based on implementation of the proposed project in combination with cumulative development within the applicable area or region.

4.x-2 Statement of Cumulative Impact

Discussion of cumulative impacts for the proposed project in paragraph format.

As discussed in detail in Chapter 5, Statutorily Required Sections, of the EIR, the cumulative setting for the proposed project is generally considered to be development anticipated to occur upon buildout of the proposed project in conjunction with the Wheatland General Plan (i.e., Wheatland City limits), as well as buildout of a number of approved or reasonably foreseeable projects within the project region.

Statement of ***level of significance*** of cumulative impact prior to mitigation is included at the end of each impact discussion. The following levels of significance are used in the EIR for cumulative impacts: less than significant, less than cumulatively considerable, or cumulatively considerable. If an impact is determined to be cumulatively considerable, mitigation will be included in order to reduce the specific impact to the maximum extent feasible. Impacts that cannot be reduced to a less than cumulatively considerable level with the impact all feasible mitigation would be considered to remain cumulatively considerable and significant and unavoidable.

Mitigation Measure(s)

Statement of *level of significance* after the mitigation is included immediately preceding mitigation measures.

4.x-2(a) *Required mitigation measure(s) presented in italics and numbered in consecutive order.*

4.x-2(b) *Required additional mitigation measure, if necessary.*

4.1 Air Quality and Greenhouse Gas Emissions

4.1 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

4.1.1 INTRODUCTION

The Air Quality and Greenhouse Gas Emissions chapter of this EIR describes the potential impacts of the proposed project on local and regional air quality emissions, and potential impacts related to greenhouse gas emissions (GHGs) and climate change. The chapter includes a discussion of the existing air quality and GHG setting, construction-related air quality and GHG impacts resulting from grading and equipment emissions, direct and indirect emissions associated with the project, the impacts of these emissions on both the local and regional scale, and mitigation measures warranted to reduce or eliminate any identified significant impacts. The chapter relies on information obtained from the City of Wheatland General Plan[1] and associated General Plan EIR,[2] the City of Wheatland Climate Action Plan (CAP),[3] information, guidance, and analysis protocol provided by the Feather River Air Quality Management District (FRAQMD), including the FRAQMD's Indirect Source Review Guidelines,[4] and a technical analysis performed by Raney Planning and Management, Inc.

4.1.2 EXISTING ENVIRONMENTAL SETTING

The following information provides an overview of the existing environmental setting in relation to air quality within the proposed project area. Air basin characteristics, ambient air quality standards (AAQS), attainment status and regional air quality plans, local air quality monitoring, odors, and sensitive receptors are discussed. In addition to the information pertaining to air quality, information related to climate change and GHGs is provided.

Air Basin Characteristics

The project site is located within the Sacramento Valley Air Basin (SVAB), which includes Butte, Colusa, Glenn, Tehama, Shasta, Yolo, Sacramento, Yuba, Sutter, and parts of Placer and Solano counties. Air flows into the SVAB through the Carquinez Strait, moves across the Delta, and carries pollutants from the heavily populated San Francisco Bay Area into the SVAB. The entire SVAB is approximately 200 miles long in a north-south direction, and averages approximately 50 miles in width, with a maximum width of 150 miles. The SVAB is further divided into two planning areas called the Northern Sacramento Valley Air Basin (NSVAB) and the Greater Sacramento Air region. The project site is within the portion of the NSVAB, which consists of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba counties, that is under the jurisdiction of the FRAQMD.

The climate of the project area is characterized by hot, dry summers and cool, wet winters. During the spring, summer, and autumn months from mid-April to mid-October, significant precipitation is unlikely, and temperatures range from a daily maximum approaching 100 degrees Fahrenheit (F) to evening lows in high 50s and low 60s. Winter conditions are characterized by occasional

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[1] City of Wheatland. *City of Wheatland General Plan Policy Document.* Adopted July 2006.

[2] City of Wheatland. *City of Wheatland General Plan Final Environmental Impact Report*. May 2006.

[3] City of Wheatland. *City of Wheatland Draft Climate Action Plan.* October 2018.

[4] Feather River Air Quality Management District. *Indirect Source Review Guidelines: A Technical Guide to Assess the Air Quality Impact of Land Use Projects Under the California Environmental Quality Act*. June 7, 2010.

rainstorms interspersed with stagnant and sometimes foggy weather. Winter daytime temperatures average in the low 50s and nighttime temperatures average in the upper 30s.

The Wheatland area prevailing wind direction is primarily up- and down-valley due to the channeling effect of the mountains on either side of the valley. During the summer months, surface air movement is from the south, particularly during the afternoon hours. During the winter months, wind direction is more variable. Prevailing wind patterns control the rate of dispersion of local pollutant emissions. An inversion is a change of atmospheric property with altitude creating a "lid" of air. Yuba County experiences two types of inversions that affect the air quality. The first type of inversion layer contributes to photochemical smog problems by confining pollution to a shallow layer near the ground. This inversion occurs in the summer, when sinking air forms a "lid" over the region. The second type of inversion occurs when the air near the ground cools while the air aloft remains warm. These inversions occur during winter nights and can cause localized air pollution "hot spots" near emission sources because of poor dispersion.

Ambient Air Quality Standards

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established AAQS for common pollutants. The federal standards are divided into primary standards, which are designed to protect the public health, and secondary standards, which are designed to protect the public welfare. The AAQS for each contaminant represent safe levels that avoid specific adverse health effects. Pollutants for which AAQS have been established are called "criteria" pollutants. Table 4.1-1 identifies the major pollutants, characteristics, health effects and typical sources. The national and California AAQS (NAAQS and CAAQS, respectively) are summarized in Table 4.1-2. The NAAQS and CAAQS were developed independently with differing purposes and methods. As a result, the federal and State standards differ in some cases. In general, the State of California standards are more stringent than the federal standards, particularly for ozone and particulate matter (PM).

A description of each criteria pollutant and its potential health effects is provided in the following section.

Ozone

Ozone is a reactive gas consisting of three oxygen atoms. In the troposphere, ozone is a product of the photochemical process involving the sun's energy, and is a secondary pollutant formed as a result of a complex chemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_X) emissions in the presence of sunlight. As such, unlike other pollutants, ozone is not released directly into the atmosphere from any sources. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation. The primary source of ozone precursors is mobile sources, including cars, trucks, buses, construction equipment, and agricultural equipment. Ground-level ozone reaches the highest level during the afternoon and early evening hours. High levels occur most often during the summer months. Ground-level ozone is a strong irritant that could cause constriction of the airways, forcing the respiratory system to work harder in order to provide oxygen. Ozone at the Earth's surface causes numerous adverse health effects and is a major component of smog. High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments.

Table 4.1-1
Summary of Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive gas produced by the photochemical process involving a chemical reaction between the sun's energy and other pollutant emissions. Often called photochemical smog.	• Eye irritation • Wheezing, chest pain, dry throat, headache, or nausea • Aggravated respiratory disease such as emphysema, bronchitis, and asthma	Combustion sources such as factories, automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	An odorless, colorless, highly toxic gas that is formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream • Impaired vision, reduced alertness, chest pain, and headaches • Can be fatal in the case of very high concentrations	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	A reddish-brown gas that discolors the air and is formed during combustion of fossil fuels under high temperature and pressure.	• Lung irrigation and damage • Increased risk of acute and chronic respiratory disease	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	A colorless, irritating gas with a rotten egg odor formed by combustion of sulfur-containing fossil fuels.	• Aggravation of chronic obstruction lung disease • Increased risk of acute and chronic respiratory disease	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	A complex mixture of extremely small particles and liquid droplets that can easily pass through the throat and nose and enter the lungs.	• Aggravation of chronic respiratory disease • Heart and lung disease • Coughing • Bronchitis • Chronic respiratory disease in children • Irregular heartbeat • Nonfatal heart attacks	Combustion sources such as automobiles, power generation, industrial processes, and wood burning. Also from unpaved roads, farming activities, and fugitive windblown dust.
Lead	A metal found naturally in the environment as well as in manufactured products.	• Loss of appetite, weakness, apathy, and miscarriage • Lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract	Industrial sources and combustion of leaded aviation gasoline.

Sources:

- ***California Air Resources Board. California Ambient Air Quality Standards (CAAQS). Available at: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed April 2024.***
- ***Sacramento Metropolitan, El Dorado, Feather River, Placer, and Yolo-Solano Air Districts, Spare the Air website. Air Quality Information for the Sacramento Region. Available at: sparetheair.com. Accessed April 2024.***
- ***California Air Resources Board. Glossary of Air Pollution Terms. Available at: https://ww2.arb.ca.gov/glossary. Accessed April 2024.***

Table 4.1-2
Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS	NAAQS	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	-	Same as primary
	8 Hour	0.070 ppm	0.070 ppm	
Carbon Monoxide	8 Hour	9 ppm	9 ppm	-
	1 Hour	20 ppm	35 ppm	
Nitrogen Dioxide	Annual Mean	0.030 ppm	53 ppb	Same as primary
	1 Hour	0.18 ppm	100 ppb	-
Sulfur Dioxide	24 Hour	0.04 ppm	-	-
	3 Hour	-	-	0.5 ppm
	1 Hour	0.25 ppm	75 ppb	-
Respirable Particulate Matter (PM_{10})	Annual Mean	20 ug/m^3	-	Same as primary
	24 Hour	50 ug/m^3	150 ug/m^3	
Fine Particulate Matter ($PM_{2.5}$)	Annual Mean	12 ug/m^3	12 ug/m^3	15 ug/m^3
	24 Hour	-	35 ug/m^3	Same as primary
Lead	30 Day Average	1.5 ug/m^3	-	-
	Calendar Quarter	-	1.5 ug/m^3	Same as primary
Sulfates	24 Hour	25 ug/m^3	-	-
Hydrogen Sulfide	1 Hour	0.03 ppm	-	-
Vinyl Chloride	24 Hour	0.010 ppm	-	-
Visibility Reducing Particles	8 Hour	see note below	-	-

ppm = parts per million
ppb = parts per billion
μg/m^3 = micrograms per cubic meter

Note: Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Source: ***California Air Resources Board. Ambient Air Quality Standards. May 4, 2016. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf. Accessed April 2024.***

Reactive Organic Gas

ROG refers to several reactive chemical gases composed of hydrocarbon compounds typically found in paints and solvents that contribute to the formation of smog and ozone by involvement in atmospheric chemical reactions. A separate health standard does not exist for ROG. However, some compounds that make up ROG are toxic, such as the carcinogen benzene.

Oxides of Nitrogen

NO_X are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. The major component of NO_X, nitrogen dioxide (NO_2), is a reddish-brown gas that discolors the air and is toxic at high concentrations. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of NO_X. NO_X reacts with ROG to form smog, which could result in adverse impacts to human health, damage the environment, and cause poor visibility. Additionally, NO_X emissions are a major component of acid rain. Health effects related to NO_X include lung irritation and lung damage and can cause increased risk of acute and chronic respiratory disease.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, reduced mental alertness, and death at high concentrations.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a rotten egg odor formed primarily by the combustion of sulfur-containing fossil fuels from mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Similar to airborne NO_X, suspended sulfur oxide particles contribute to poor visibility. The sulfur oxide particles are also a component of PM_{10}.

Particulate Matter

Particulate matter, also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health impacts. The USEPA is concerned about particles that are 10 micrometers in diameter or smaller (PM_{10}) because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, the particles could affect the heart and lungs and cause serious health effects. USEPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5-10}$)," which are found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," which are found in smoke and haze, are 2.5 micrometers in diameter and smaller. $PM_{2.5}$ particles could be directly emitted from sources such as forest fires, or could form when gases emitted from power plants, industries, and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very, very small particles (less than 0.1 micrometers in diameter) largely resulting from the combustion of fossil fuels, meat, wood, and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, their high surface area, deep lung penetration, and transfer into the bloodstream could result in disproportionate health impacts relative to their mass. UFP is not currently regulated separately, but is analyzed as part of $PM_{2.5}$.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants, which are emitted directly to the atmosphere and secondary pollutants, which are formed in the atmosphere by chemical reactions among precursors. Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include the same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust. Long-term PM pollution, especially fine particles, could result in significant health problems including, but not limited to, the following: increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing; decreased lung function; aggravated asthma; development of chronic respiratory disease in children; development of chronic bronchitis or obstructive lung disease; irregular heartbeat; heart attacks; and increased blood pressure.

Lead

Lead is a relatively soft and chemically resistant metal that is a natural constituent of air, water, and the biosphere. Lead forms compounds with both organic and inorganic substances. As an air pollutant, lead is present in small particles. Sources of lead emissions in California include a variety of industrial activities. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically. However, because lead was emitted in large amounts from vehicles when leaded gasoline was used, lead is present in many soils (especially urban soils) as a result of airborne dispersion and could become re-suspended into the air.

Because lead is slowly excreted by the human body, exposures to small amounts of lead from a variety of sources could accumulate to harmful levels. Effects from inhalation of lead above the level of the AAQS may include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms could include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children. Lead also causes cancer.

Sulfates

Sulfates are the fully oxidized ionic form of sulfur and are colorless gases. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. The sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The sulfates standard established by CARB is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, because they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations, especially in enclosed spaces (800 ppm can cause death).

Vinyl Chloride

Vinyl chloride (C_2H_3Cl, also known as VCM) is a colorless gas that does not occur naturally, but is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC) which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Visibility Reducing Particles

Visibility reducing particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are also a category of environmental concern. TACs are present in many types of emissions with varying degrees of toxicity. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases.

Health risks from TACs are a function of both the concentration of emissions and the duration of exposure, which typically are associated with long-term exposure and the associated risk of contracting cancer. Health effects of exposure to TACs other than cancer can include birth defects, neurological damage, and death. Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to criteria air pollutants that have established AAQS. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an AAQS or emission-based threshold.

Common stationary sources of TACs include gasoline stations, dry cleaners, and diesel backup generators, which are subject to stationary source permit requirements. The other, often more significant, common source type is on-road motor vehicles, such as cars and trucks, on freeways and roads, and off-road sources such as construction equipment, ships, and trains. Fossil fueled combustion engines, including those used in cars, trucks, and some pieces of construction equipment, release at least 40 different TACs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene, toluene, xylenes, and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes.

Diesel Particulate Matter

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust, DPM, is composed of carbon particles and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of such chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including ROG and NO_X. Due to the published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects, the CARB has identified DPM from diesel-fueled engines as a TAC. Although a variety of TACs are emitted by fossil fueled combustion engines, the cancer risk due to DPM exposure represents a more significant risk than the other TACs discussed above.[5]

More than 90 percent of DPM is less than one micrometer in diameter, and, thus, DPM is a subset of $PM_{2.5}$. As a California statewide average, DPM comprises about eight percent of $PM_{2.5}$ in outdoor air, although DPM levels vary regionally due to the non-uniform distribution of sources throughout the State. Most major sources of diesel emissions, such as ships, trains, and trucks,

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[5] California Air Resources Board. *Reducing Toxic Air Pollutants in California's Communities*. February 6, 2002.

operate in and around ports, rail yards, and heavily traveled roadways. Such areas are often located near highly populated areas. Thus, elevated DPM levels are mainly an urban problem, with large numbers of people exposed to higher DPM concentrations, resulting in greater health consequences compared to rural areas.

Due to the high levels of diesel activity, high volume freeways, stationary diesel engines, rail yards and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Construction-related activities also have the potential to generate concentrations of DPM from on-road haul trucks and off-road equipment exhaust emissions.

The size of diesel particulates that are of the greatest health concern are fine particles (i.e., $PM_{2.5}$) and UFPs. The small diameter of UFPs imparts the particulates with unique attributes, such as high surface areas and the ability to penetrate deeply into lungs. Once UFPs have been deposited in lungs, the small diameter allows the UFPs to be transferred to the bloodstream. The high surface area of the UFPs also allows for a greater adsorption of other chemicals, which are transported along with the UFPs into the bloodstream of the inhaler, where the chemicals can eventually reach critical organs.[6] The penetration capability of UFPs may contribute to adverse health effects related to heart, lung, and other organ health.[7] UFPs are a subset of DPM and activities that create large amounts of DPM, such as the operations involving heavy diesel-powered engines, also release UFPs. Considering that UFPs are a subset of DPM, and DPM represents a subset of $PM_{2.5}$, estimations of either concentrations or emissions of $PM_{2.5}$ or DPM include UFPs.

Naturally-Occurring Asbestos

Another concern related to air quality is naturally-occurring asbestos (NOA). Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. When rock containing asbestos is broken or crushed, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Because asbestos is a known carcinogen, NOA is considered a TAC. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

NOA is typically associated with fault zones, and areas containing serpentinite or contacts between serpentinite and other types of rocks. According to mapping prepared by the California Department of Conservation, the project site is not located within an area likely to contain serpentine or other ultramafic rocks.[8] Therefore, NOA is not expected to be present at the project site.

Attainment Status and Regional Air Quality Plans

The Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified as to their status under

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[6] Health Effects Institute. *Understanding the Health Effects of Ambient Ultrafine Particles*. January 2013.

[7] South Coast Air Quality Management District. *Final 2012 Air Quality Management Plan*. December 2012.

[8] California Department of Conservation, Division of Mines and Geology. *A General Location Guide For Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*. August 2000.

the NAAQS and/or CAAQS. Areas not meeting the NAAQS are designated by the USEPA as nonattainment. Further classifications of nonattainment areas are based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious. Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation. The FCAA requires areas violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures for states to use to attain the NAAQS. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA reviews SIPs to determine if they conform to the mandates of the FCAA amendments and would achieve air quality goals when implemented.

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CCAA. The CCAA classifies ozone nonattainment areas as moderate, serious, severe, and extreme based on severity of violations of CAAQS. The CCAA requires local air pollution control districts with air quality that is in violation of CAAQS to prepare air quality attainment plans that demonstrate district-wide emission reductions of five percent per year averaged over consecutive three-year periods, unless an approved alternative measure of progress is developed.

According to the USEPA's listing of Current Nonattainment Counties for All Criteria Pollutants, as of April 2024, Yuba County is not listed among the counties in the U.S. currently designated as nonattainment for criteria pollutants.[9] As such, Yuba County is in attainment or unclassified for all NAAQS. However, it is noted that the FRAQMD jurisdiction includes both Yuba County and Sutter County, and Sutter County is designated as nonattainment for several criterial pollutants. As detailed in Table 4.1-3, the FRAQMD includes areas designated serious nonattainment and nonattainment-transitional for the State 1-hour ozone standard, nonattainment-transitional for the State 8-hour ozone and serious nonattainment for the federal 8-hour ozone standard, and nonattainment for the State PM_{10} standard.

In compliance with the FCAA and CCAA, due to the nonattainment designations, the FRAQMD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State standards for ozone and particulate matter. The air quality plans include emissions inventories to measure the sources of air pollutants to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals. Each of the attainment plans currently in effect are discussed in further detail in the Regulatory Context section of this chapter.

Local Air Quality Monitoring

Air quality is monitored by CARB at various locations to determine which air quality standards are being violated, and to direct emission reduction efforts, such as developing attainment plans and rules, incentive programs, etc. Two monitoring stations exist within the boundaries of the FRAQMD. The Yuba City-Almond Street monitoring station, located at 773 Almond Street, Yuba City, is the nearest air quality monitoring station to the project site, located approximately 12 miles northwest of the Wheatland city limits.

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[9] U.S. Environmental Protection Agency. *Green Book: Current Nonattainment Counties for All Criteria Pollutants*. Available at: https://www3.epa.gov/airquality/greenbook/ancl.html. Accessed April 2024.

Table 4.1-3
FRAQMD Attainment Status Designations

Pollutant	California Standards	Federal Standards
1-Hour Ozone	**S. Sutter County – Serious Nonattainment;** **Remainder of District – Nonattainment-Transitional**	Revoked in 2005
8-Hour Ozone	**Nonattainment-Transitional**	**S. Sutter County – Serious Nonattainment**; Elevations over 2,000 feet in Sutter Buttes – Attainment; Remainder of District – Unclassified/Attainment
Carbon Monoxide	Sutter County – Attainment; Yuba County – Unclassified	-
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified/Attainment
Respirable Particulate Matter (PM_{10})	**Nonattainment**	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Attainment
Lead	Attainment	-
Sulfates	Attainment	-
Hydrogen Sulfide	Unclassified	-
Visibility Reducing Particles	Unclassified	-

Source: ***Feather River Air Quality Management District. State and National Ambient Air Quality Standards. Available at: https://www.fraqmd.org/state-and-national-ambient-air-quality-standards. Accessed April 2024.***

The number of days exceeding the AAQS from 2018 to 2020 are presented below in Table 4.1-4. While the Yuba City-Almond Street monitoring station is located in Sutter County, the data collected at the station is indicative of air quality levels in the Yuba City-Marysville area, according to the FRAQMD.[10] Therefore, the data collected at the monitoring station is generally representative of the air quality experienced in the project vicinity.

Odors

While offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable annoyance and distress among the public and can generate citizen complaints to local governments and air districts. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative or formulaic methodologies to determine the presence of a significant odor impact are difficult. Adverse effects of odors on residential areas and other sensitive receptors warrant the closest scrutiny; but consideration should also be given to other land use types where people congregate, such as recreational facilities, worksites, and commercial areas. The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between a receptor and an odor source, and local meteorological conditions.

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[10] Feather River Air Quality Management District. *Stations and Data*. Available at: https://www.fraqmd.org/stations-and-data. Accessed April 2024.

Table 4.1-4 Air Quality Data Summary for the Yuba City-Almond Street Air Quality Monitoring Site (2020-2022)				
		Days Standard Was Exceeded		
Pollutant	**Standard**	**2020**	**2021**	**2022**
1-Hour Ozone	State	0	0	0
8-Hour Ozone	State	2	5	2
	Federal	2	4	0
24-Hour PM_{10}	State	40.3	*	9.1
	Federal	4.0	0	0
24-Hour $PM_{2.5}$	Federal	31.2	11.1	2.0
1-Hour Nitrogen Dioxide	State	0	0	0
	Federal	0	0	0

* Insufficient (or no) data available to determine the value.

***Source:** California Air Resources Board, Aerometric Data Analysis and Management (iADAM) System, https://www.arb.ca.gov/adam/select8/sc8start.php. Accessed April 2024.*

One of the most important factors influencing the potential for an odor impact to occur is the distance between the odor source and receptors, also referred to as a buffer zone or setback. The greater the distance between an odor source and receptor, the less concentrated the odor emission would be when reaching the receptor.

Meteorological conditions also affect the dispersion of odor emissions, which determines the exposure concentration of odiferous compounds at receptors. The predominant wind direction in an area influences which receptors are exposed to the odiferous compounds generated by a nearby source. Receptors located upwind from a large odor source may not be affected due to the produced odiferous compounds being dispersed away from the receptors. Wind speed also influences the degree to which odor emissions are dispersed away from any area.

Odiferous compounds could be generated from a variety of source types including both construction and operational activities. Examples of common land use types that typically generate significant odor impacts include, but are not limited to, wastewater treatment plants; composting/green waste facilities; recycling facilities; petroleum refineries; chemical manufacturing plants; painting/coating operations; rendering plants; and food packaging plants. Although less common, diesel fumes associated with substantial diesel-fueled equipment and heavy-duty trucks, such as from construction activities, freeway traffic, or distribution centers, can be found to be objectionable. As discussed further under Impact 4.1-4, the City of Wheatland Wastewater Treatment Plant (WWTP), which is a land use type associated with the potential to generate odors, is located immediately adjacent to the southwest corner of the project site.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, day care centers, playgrounds, and medical facilities. The nearest sensitive receptors would be the single-family residences located to the north and west of the project site (refer to Figure 3-2 of the Project

Description chapter of this EIR), with the closest residential units located west of 6th Street, approximately 200 feet from where project construction would occur.

Greenhouse Gas Emissions

GHGs are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the Earth's atmosphere. Some GHGs occur naturally and are emitted into the atmosphere through both natural processes and human activities. Other GHGs are created and emitted solely through human activities. The principal GHGs that enter the atmosphere due to human activities are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated carbons. Other common GHGs include water vapor, ozone, and aerosols. The increase in atmospheric concentrations of GHG due to human activities has resulted in more heat being held within the atmosphere, which is the accepted explanation for global climate change.

The primary GHG emitted by human activities is CO_2, with the next largest components being CH_4 and N_2O. A wide variety of human activities result in the emission of CO_2. Some of the largest sources of CO_2 include the burning of fossil fuels for transportation and electricity, industrial processes including fertilizer production, agricultural processing, and cement production. The primary sources of CH_4 emissions include domestic livestock sources, decomposition of wastes in landfills, releases from natural gas systems, coal mine seepage, and manure management. The main human activities producing N_2O are agricultural soil management, fuel combustion in motor vehicles, nitric acid production, manure management, and stationary fuel combustion. Emissions of GHG by economic sector indicate that energy-related activities account for the majority of U.S. emissions. Transportation is the largest single-source of GHG emissions, and electric power is the second largest source, followed by industrial activities. The agricultural, commercial, and residential sectors account for the remainder of GHG emission sources.[11]

Emissions of GHG are partially offset by uptake of carbon and sequestration in trees, agricultural soils, landfilled yard trimmings and food scraps, and absorption of CO_2 by the Earth's oceans. Additional emission reduction measures for GHG could include, but are not limited to, compliance with local, State, or federal plans or strategies for GHG reductions, on-site and off-site mitigation, and project design features. Attainment concentration standards for GHGs have not been established by the federal or State government.

Global Warming Potential

Global Warming Potential (GWP) is one type of simplified index (based upon radiative properties) that can be used to estimate the potential future impacts of emissions of various gases. According to the USEPA, the GWP of a gas, or aerosol, to trap heat in the atmosphere is the "cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas." The reference gas for comparison is CO_2. GWP is based on a number of factors, including the heat-absorbing ability of each gas relative to that of CO_2, as well as the decay rate of each gas relative to that of CO_2. Each gas's GWP is determined by comparing the radiative forcing associated with emissions of that gas versus the radiative forcing associated with emissions of the same mass of CO_2, for which the GWP is set at one. Methane gas, for example, is estimated by the USEPA to have a comparative global warming potential 25 times greater than that of CO_2, as shown in Table 4.1-5.

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[11] U.S. Environmental Protection Agency. *Sources of Greenhouse Gas Emissions*. Available at: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions. Accessed April 2024.

As shown in the table, at the extreme end of the scale, sulfur hexafluoride is estimated to have a comparative GWP 22,800 times that of CO_2. The atmospheric lifetimes of such GHGs are estimated by the USEPA to vary from 50 to 200 years for CO_2, to 50,000 years for CF_4. Longer atmospheric lifetimes allow GHG to buildup in the atmosphere; therefore, longer lifetimes correlate with the GWP of a gas. The common indicator for GHG is expressed in terms of metric tons of CO_2 equivalents ($MTCO_2e$), which is calculated based on the GWP for each pollutant.

Table 4.1-5
GWPs and Atmospheric Lifetimes of Select GHGs

Gas	Atmospheric Lifetime (years)	GWP (100-year time horizon)
Carbon Dioxide (CO_2)	See footnote[1]	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

[1] For a given amount of CO_2 emitted, some fraction of the atmospheric increase in concentration is quickly absorbed by the oceans and terrestrial vegetation, some fraction of the atmospheric increase will only slowly decrease over a number of years, and a small portion of the increase will remain for many centuries or more.

Source: USEPA. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019 [Table 1-2]. April 14, 2021.

Effects of Global Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The Intergovernmental Panel on Climate Change's (IPCC) Climate Change 2021: The Physical Science Basis report indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia.[12] Signs that global climate change has occurred include:

- Warming of the atmosphere and ocean;
- Diminished amounts of snow and ice;
- Rising sea levels; and
- Ocean acidification.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The Office of Environmental Health Hazard Assessment (OEHHA) identified various indicators of climate change in California, which are scientifically based measurements that track trends in various aspects of climate change. Many indicators reveal discernable evidence that climate change is occurring in California and is having significant, measurable impacts in the State. Changes in the State's climate have been observed, including:

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[12] Intergovernmental Panel on Climate Change. *Climate Change 2021: The Physical Science Basis Summary for Policymakers*. Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf. Accessed April 2024.

- An increase in annual average air temperature with record warmth from 2012 to 2016;
- More frequent extreme heat events;
- More extreme drought; and
- A decline in winter chill and increase in variability of statewide precipitation.

Warming temperatures and changing precipitation patterns have altered California's physical systems—the ocean, lakes, rivers, and snowpack—upon which the State depends. Winter snowpack and spring snowmelt runoff from the Sierra Nevada and southern Cascade Mountains provide approximately one-third of the State's annual water supply. Impacts of climate on physical systems have been observed, such as high variability of snow-water content (i.e., amount of water stored in snowpack), decrease in snowmelt runoff, glacier change (loss in area), rise in sea levels, increase in average lake water temperature and coastal ocean temperature, and a decrease in dissolved oxygen in coastal waters. Impacts of climate change on biological systems, including humans, wildlife, and vegetation, have also been observed, including climate change impacts on terrestrial, marine, and freshwater ecosystems. However, it should be noted that the effects of climate change are not fully understood. For example, due to a series of atmospheric rivers that occurred throughout the 2022-2023 season, California experienced the most snow the State has seen since the record was set in the 1982-1983 season.

California's Fourth Climate Change Assessment predicts that the Sacramento Valley region is expected to see an average daily temperature maximum increase of 10 degrees Fahrenheit by the end of the century. Specifically, the City of Wheatland is anticipated to experience an average of 24 days per year of extreme heat (>103.9 F), as compared to the approximately four days per year that occur now.[13] Such extreme heat events pose a public health hazard. In addition to extreme heat, the region is anticipated to experience more extreme floods and greater floodplain vulnerability.[14] Although average annual precipitation is not anticipated to substantially change in the next 50 to 75 years, precipitation will likely be delivered in more intense storms and over the course of a shorter wet season.[15]

4.1.3 REGULATORY CONTEXT

Air quality and GHG emissions are monitored and regulated through the efforts of various international, federal, State, and local government agencies. Agencies work jointly and individually to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating and improving the air quality within the project area and monitoring or reducing GHG emissions are discussed below.

Federal Regulations Related to Air Quality

The following discussion provides a summary of the federal regulations relevant to air quality, organized by pollutant type.

Criteria Pollutants

The FCAA, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The USEPA is responsible for implementing most aspects of the FCAA, including setting NAAQS for major air pollutants; setting hazardous air pollutant standards; approving state

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[13] Cal-Adapt. *Local Climate Change Snapshot for Wheatland, California*, Available at: https://cal-adapt.org/tools/local-climate-change-snapshot. Accessed April 2024.

[14] *Ibid.*

[15] *Ibid.*

attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric ozone protection measures, and enforcement provisions. Under the FCAA, NAAQS are established for the following criteria pollutants: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for ozone, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for ozone, NO_2, SO_2, PM_{10}, $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The FCAA requires the USEPA to reassess the NAAQS at least every five years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a SIP that demonstrates how those areas will attain the standards within mandated time frames.

Hazardous Air Pollutants/Toxic Air Contaminants

The 1977 FCAA amendments required the USEPA to identify national emission standards for hazardous air pollutants to protect public health and welfare. Hazardous air pollutants include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 FCAA Amendments, which expanded the control program for hazardous air pollutants, 189 substances and chemical families were identified as hazardous air pollutants.

Federal Regulations Related to GHG Emissions

The following are the federal regulations relevant to GHG emissions.

Federal Vehicle Standards

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, USEPA, and National Highway Traffic Safety Administration (NHTSA) to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017 through 2025 light-duty vehicles. The proposed standards were projected to achieve emission rates as low as 163 grams of CO_2 per mile by model year 2025 on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if the foregoing emissions level was achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017 through 2021 (77 FR 62624–63200), and NHTSA intended to set standards for model years 2022 through 2025 in future rulemaking.

In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program would have applied to vehicles with model years 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types of sizes of buses and work trucks. The final standards were expected to lower CO_2 emissions by approximately 1.1 billion metric tons (MT), and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

In August 2018, the USEPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new, less-stringent standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards that were previously in place, the 2018 proposal would increase U.S. fuel consumption by approximately 0.5 million barrels per day, and would impact the global climate by 3/1000th of 1°C by 2100. California and other states stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures, and committed to cooperating with other countries to implement global climate change initiatives.

On September 27, 2019, the USEPA and NHTSA published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (84 FR 51,310), which became effective November 26, 2019. The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission-vehicle mandates in California. On March 31, 2020, the USEPA and NHTSA issued the Part Two Rule, which sets CO_2 emissions standards and corporate average fuel economy standards for passenger vehicles and light-duty trucks for model years 2021 through 2026. On January 20, 2021, President Joe Biden issued an Executive Order (EO) on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, which includes review of the Part One Rule by April 2021 and review of the Part Two Rule by July 2021. In response to the Part One Rule, in December 2021, the U.S. Department of Transportation withdrew its portions of the "SAFE I" rule. As a result, states are now allowed to issue their own GHG emissions standards and zero-emissions vehicle mandates.[16] In addition, the Part Two Rule was adopted to revise the existing national GHG emission standards for passenger cars and light trucks through model year 2026. These standards are the strongest vehicle emissions standards ever established for the light-duty vehicle sector and will result in avoiding more than three billion tons of GHG emissions through 2050.[17]

State Regulations Related to Air Quality

The following discussion summarizes applicable State regulations related to air quality, organized by pollutant type. Only the most prominent and applicable California air quality-related legislation is included below; however, an exhaustive list and extensive details of California air quality legislation can be found at the CARB website (http://www.arb.ca.gov/html/lawsregs.htm).

Criteria Air Pollutants

The FCAA delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the CCAA of 1988, responding to the FCAA, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered "in attainment" if pollutant levels are continuously below the CAAQS and do not violate the standards more than once each year.

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[16] National Highway Traffic Safety Administration. *In Removing Major Roadblock to State Action on Emissions Standards, U.S. Department of Transportation Advances Biden-Harris Administration's Climate and Jobs Goals.* Available at: https://www.nhtsa.gov/press-releases/cafe-preemption-final-rule. Accessed April 2024.

[17] U.S. Environmental Protection Agency. *Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026*. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions. Accessed April 2024.

The CAAQS for ozone, CO, SO_2 (one-hour and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 4.1-2.

Hazardous Air Pollutants/Toxic Air Contaminants

The State Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner), and involved definition of a list of TACs. The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. The State list of TACs includes the federally-designated hazardous air pollutants. In 1987, the Legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hot spots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over five years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and, if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

CARB Air Quality and Land Use Handbook

CARB's Air Quality and Land Use Handbook: A Community Health Perspective (CARB Handbook) addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities.[18] The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (Interstate-405 and Interstate-710), the San Francisco Bay, and San Diego areas. The recommendations identified by CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, "Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day".[19]

Importantly, the Introduction chapter of the CARB Handbook clarifies that the guidelines are strictly advisory, recognizing that: "[l]and use decisions are a local government responsibility. The Air Resources Board Handbook is advisory, and these recommendations do not establish regulatory standards of any kind." CARB recognizes that there may be land use objectives as well as meteorological and other site-specific conditions that need to be considered by a governmental jurisdiction relative to the general recommended setbacks, specifically stating, "[t]hese recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues".[20]

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[18] California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
[19] *Ibid.*
[20] *Ibid.*

Diesel Particulate Matter

In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce diesel emissions, including DPM, from new and existing diesel-fueled vehicles and engines. The regulation was anticipated to result in an 80 percent decrease in statewide diesel health risk by 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. The aforementioned regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. Several Airborne Toxic Control Measures (ATCMs) exist that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 California Code of Regulations [CCR] 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

Heavy-Duty Diesel Truck and Bus Regulation

CARB adopted the final Heavy-Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014, to reduce DPM and NO_X emissions from heavy-duty diesel vehicles. The rule requires nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an ATCM to limit idling of diesel-fueled commercial vehicles on December 12, 2013. The rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than five minutes at any location (13 CCR 2485).

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person must not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. Section 41700 also applies to sources of objectionable odors.

Heavy-Duty Vehicle Idling Emission Reduction Program

On October 20, 2005, CARB approved a regulatory measure to reduce emissions of toxics and criteria pollutants by limiting idling of new and in-use sleeper berth equipped diesel trucks.[21] The regulation established new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. For example, the regulation requires 2008 and newer model year heavy-duty diesel engines to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling, or optionally meet a stringent NO_X emission standard. The regulation also requires operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engine when idling more than five minutes at any location within California. Emission producing alternative technologies such as diesel-fueled auxiliary power systems and fuel-fired heaters are also required to meet emission performance requirements that ensure emissions are not exceeding the emissions of a truck engine operating at idle.

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[21] California Air Resources Board. *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*. Available at: https://ww2.arb.ca.gov/our-work/programs/atcm-to-limit-vehicle-idling/about. Accessed April 2024.

In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, CARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing), off-road, heavy-duty diesel vehicles in California.[22] Such vehicles are used in construction, mining, and industrial operations. The regulation is designed to reduce harmful emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements, imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The idling limits require operators of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to less than five minutes. The idling requirements are specified in Title 13 of the CCR. All fleets are currently prohibited from adding Tier 0, Tier 1, or Tier 2 vehicles to the fleet. In addition, starting January 1, 2024 fleets with a total horsepower over 2,501, excluding non-profit training centers, may not add any Tier 3 or Tier 4 Interim vehicles.[23]

State Regulations Related to GHG Emissions

The statewide GHG emissions regulatory framework is summarized below. The following text describes EOs, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues. The following discussion does not include an exhaustive list of applicable regulations; rather, only the most prominent and applicable California legislation related to GHG emissions and climate change is included below.

State Climate Change Targets

California has taken a number of actions to address climate change, including EOs, legislation, and CARB plans and requirements, which are summarized below.

EO S-3-05

EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the State agencies for implementing the EO and for reporting on progress toward the targets. The EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

EO S-3-05 also directed the CalEPA to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team was formed, which subsequently issues yearly GHG reduction report cards to track the progress of emission reduction strategies. Each report card documents the effectiveness of measures to reduce GHG in California, presents GHG emissions from State agencies' operations, and shows reductions that have occurred in the two years prior to publication.

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[22] California Air Resources Board. *In-Use Off-Road Diesel Vehicle Regulation*. December 10, 2014. Available at: https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation/about. Accessed April 2024.

[23] California Air Resources Board. *Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation.* August 29, 2023.

Assembly Bill 32

In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive, multi-year program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the State's long-range climate objectives. AB 32 also required that the CARB prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020. The CARB's Scoping Plan is described in further detail below.

Executive Order B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050 as set forth in EO S-3-05. To facilitate achieving this goal, EO B-30-15 called for an update to the CARB's Climate Change Scoping Plan: A Framework for Change (Scoping Plan) to express the 2030 target in terms of million metric tons (MMT) CO_2e. The CARB's Scoping Plan is discussed in further detail below. The EO also called for State agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

Senate Bill 32 and AB 197

Senate Bill (SB) 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, to provide ongoing oversight over implementation of the State's climate policies. AB 197 also added two members of the Legislature to the Board as non-voting members; requires CARB to make available and update (at least annually via the CARB's website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

CARB's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a scoping plan for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code Section 38561[a]), and to update the Scoping Plan at least once every five years. In 2008, CARB approved the first Scoping Plan. The Scoping Plan included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives. The key elements of the Scoping Plan include the following:

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
2. Achieving a statewide renewable energy mix of 33 percent;
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions;

4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
5. Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS) (17 CCR, Section 95480 et seq.); and
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15 percent from 2008 levels by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the State's GHG emission reduction priorities for the next five years and laid the groundwork to start the transition to the post-2020 goals set forth in EO S-3-05 and EO B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuation of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050, including energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the State's 1990 emissions level using more recent GWPs identified by the IPCC, from 427 MMT CO_2e to 431 MMT CO_2e.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40 percent below 1990 levels by 2030 to keep California on a trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050, as set forth in EO S-3-05. In summer 2016, the Legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In December 2017, the Scoping Plan was once again updated. The 2017 Scoping Plan built upon the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that would serve as the framework to achieve the 2030 GHG target as established by SB 32 and define the State's climate change priorities to 2030 and beyond. For local governments, the 2017 Scoping Plan replaced the initial Scoping Plan's 15 percent reduction goal with a recommendation to aim for a communitywide goal of no more than six $MTCO_2e$ per capita by 2030, and no more than two $MTCO_2e$ per capita by 2050, which are consistent with the State's long-term goals. The 2017 Scoping Plan recognized the benefits of local government GHG planning (e.g., through Climate Action Plans [CAPs]) and provided more information regarding tools to support those efforts. The 2017 Scoping Plan also recognized the CEQA streamlining provisions for project-level review where a legally adequate CAP exists.

When discussing project-level GHG emissions reduction actions and thresholds in the context of CEQA, the 2017 Scoping Plan stated that "achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development" for project-level CEQA analysis, but also recognized that such a standard may not be appropriate or feasible for every development project. The 2017 Scoping Plan further provided that "the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA."

The most recent update to the Scoping Plan, the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) was adopted by the CARB in December 2022.[24] The 2022 Scoping Plan Update builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. The 2022 Scoping Plan Update, the most comprehensive and far-reaching Scoping Plan developed to date, identifies a technologically feasible and cost-effective path to achieve carbon neutrality by 2045 while also assessing the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan. The 2030 target is an interim but important stepping stone along the critical path to the broader goal of deep decarbonization by 2045. The relatively longer path assessed in the Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts to reduce GHGs and air pollution, while identifying new clean technologies and energy. Given the focus on carbon neutrality, the Scoping Plan also includes discussion for the first time of the Natural and Working Lands (NWL) sectors as both sources of emissions and carbon sinks.

The 2022 Scoping Plan Update lays out a path to achieve targets for carbon neutrality and reduce GHG emissions by 85 percent below 1990 levels by 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants (SLCP), support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

CARB's Regulations for the Mandatory Reporting of GHG Emissions

CARB's Regulation for the Mandatory Reporting of GHG Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that the USEPA promulgated in its Final Rule on Mandatory Reporting of GHGs (40 Code of Federal Regulations [CFR] Part 98). In general, entities subject to the Mandatory Reporting Regulation that emit more than 10,000 $MTCO_2e$ per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 $MTCO_2e$ per year threshold are required to have their GHG emission report verified by a CARB-accredited third party.

Senate Bill 1383

SB 1383 establishes specific targets for the reduction of SLCPs (40 percent below 2013 levels by 2030 for CH_4 and hydrofluorocarbons [HFCs], and 50 percent below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, CARB adopted its SLCP Reduction Strategy in March 2017.

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[24] California Air Resources Board. *2022 Scoping Plan for Achieving Carbon Neutrality*. November 16, 2022.

The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH_4, and fluorinated gases.

Executive Order B-55-18/Assembly Bill 1279

EO B-55-18 (September 2018) establishes a statewide policy for California to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net-negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the State's GHG emissions. CARB intends to work with relevant State agencies to ensure that future scoping plan updates identify and recommend measures to achieve the carbon neutrality goal. On September 16, 2022, AB 1279, also known as the California Climate Crisis Act, codified the carbon neutrality goal established by EO B-55-18.

Mobile Sources

The following regulations relate to the control of GHG emissions from mobile sources. Mobile sources include both on-road vehicles and off-road equipment.

Assembly Bill 1493

AB 1493 (Pavley) (July 2002) was enacted in response to the transportation sector accounting for more than half of California's CO_2 emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the State board to be vehicles that are primarily used for non-commercial personal transportation in the State. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards would result in a reduction of approximately 22 percent of GHG emissions compared to the emissions from the 2002 fleet, and the mid-term (2013–2016) standards would result in a reduction of approximately 30 percent.

Senate Bill 375

SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, and to update those targets every eight years. SB 375 requires the State's 18 regional metropolitan planning organizations to prepare a sustainable communities strategy as part of their Regional Transportation Plans that will achieve the GHG reduction targets set by CARB. If a metropolitan planning organization is unable to devise a sustainable communities strategy to achieve the GHG reduction target, the metropolitan planning organization must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to California Government Code Section 65080(b)(2)(K), a sustainable communities strategy does not (1) regulate the use of land, (2) supersede the land use authority of cities and counties, or (3) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with the sustainable community strategy. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the State-mandated housing element process.

Advanced Clean Cars Program and Zero-Emissions Vehicle Program

The Advanced Clean Cars program (January 2012) is an emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. By 2025, implementation of the rule is anticipated to reduce emissions of smog-forming pollution from cars by 75 percent compared to the average new car sold in 2015. To reduce GHG emissions, CARB, in conjunction with the USEPA and NHTSA, adopted GHG standards for model year 2017 to 2025 vehicles; the standards were estimated to reduce GHG emissions by 34 percent by 2025. The zero-emissions vehicle program acts as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of zero-emissions vehicles and plug-in hybrid electric vehicles (EVs) in the 2018 to 2025 model years.

Executive Order B-16-12

EO B-16-12 (March 2012) required that State entities under the governor’s direction and control support and facilitate the rapid commercialization of zero-emissions vehicles. The order directed CARB, California Energy Commission (CEC), California Public Utilities Commission (CPUC), and other relevant agencies to work with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve goals by 2015, 2020, and 2025. On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. EO B-16-12 did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

Assembly Bill 1236

AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of EV charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based on substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and a feasible method to satisfactorily mitigate or avoid the specific, adverse impact does not exist. The bill provided for appeal of that decision to the planning commission, as specified. AB 1236 required EV charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for EV charging stations. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt the ordinance by September 30, 2017.

Executive Order N-79-20

EO N-79-20 (September 2020) establishes a Statewide goal that 100 percent of in-state vehicle sales of new passenger cars and trucks shall be zero-emission by the year 2035. The order directed the CARB to develop and propose passenger vehicle and truck regulations requiring increasing volumes of new zero-emission vehicles sold in the State in order to achieve the goal by 2035. In addition, the order required that a Zero-Emissions Vehicle Market Development Strategy be created and updated every three years to ensure coordinated and expeditious implementation of the EO.

Water

The following regulations relate to the conservation of water, which reduces GHG emissions related to electricity demands from the treatment and transportation of water.

Executive Order B-29-15

In response to a drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives subsequently became permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the State. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance (MWELO) that, among other changes, significantly increases the requirements for landscape water use efficiency, and broadens the applicability of the ordinance to include new development projects with smaller landscape areas.

Solid Waste

The following regulations relate to the generation of solid waste and means to reduce GHG emissions from solid waste produced within the State.

Assembly Bill 939 and Assembly Bill 341

In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code [PRC] Sections 40000 et seq.), was passed because of the observed increase in waste stream and the decrease in landfill capacity.

AB 341 (Chapter 476, Statutes of 2011 [Chesbro]) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that the policy goal of the State is that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery to develop strategies to achieve the State's policy goal.

Other State Actions

The following State regulations are broadly related to GHG emissions.

Senate Bill 97

SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Governor's OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities. The advisory further recommended that the lead agency determine the significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The California Natural Resource Agency (CNRA) adopted the CEQA Guidelines amendments in December 2009, and the amended CEQA Guidelines became effective in March 2010.

Under the amended CEQA Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis, or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The CEQA Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead allowing a lead agency to develop, adopt, and apply the lead agency's own thresholds of significance or those developed by other agencies or experts. CNRA acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.

With respect to GHG emissions, the CEQA Guidelines state that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions (14 CCR 15064.4[a]). The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

Executive Order S-13-08

EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs State agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009, and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014. To assess the State's vulnerability, the report summarizes key climate change impacts to the State for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016. In January 2018, the CNRA released the Safeguarding California Plan: 2018 Update, which communicates current and needed actions that the State government should take to build climate change resiliency.

Title 24, Part 6

Title 24 of the CCR, which is known as the California Building Standards Code (CBSC), was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed periodically, and revised if necessary, by the Building Standards Commission and CEC ([PRC Section 25402[b][1]). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (PRC Section 25402). The regulations are scrutinized and analyzed for technological and economic feasibility (PRC Section 25402[d]) and cost effectiveness (PRC Sections 25402[b][2] and [b][3]). As a result, the standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2022 Title 24 standards are the currently applicable building energy efficiency standards and became effective on January 1, 2023. Compliance with the 2022 Title 24 Building Energy Efficiency Standards will reduce energy use and associated GHG emissions compared to structures built in compliance with the previous 2019 Title 24 standards. The 2022 Title 24 standards focus on four key areas in newly constructed homes and businesses:[25]

- Encouraging electric heat pump technology for space and water heating, which consumes less energy and produces fewer emissions than gas-powered units.
- Establishing electric-ready requirements for single-family homes to position owners to use cleaner electric heating, cooking and EV charging options whenever they choose to adopt those technologies.
- Expanding solar PV system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as the CALGreen Code, and establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and State-owned buildings and schools and hospitals. The original CALGreen standards have been updated several times. The CALGreen 2022 standards, which are the current standards, improved upon the 2019 CALGreen standards, and went into effect on January 1, 2023. The mandatory standards require the following:

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings;
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California DWR's MWELO;
- 65 percent of construction and demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency;
- Inclusion of EV charging stations or designated spaces capable of supporting future charging stations; and
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two tiers and implemented at the discretion of local agencies and applicants. According to Section A4.602

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[25] California Energy Commission. ***Energy Commission Adopts Updated Building Standards to Improve Efficiency, Reduce Emissions From Homes and Businesses.*** Available at: https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0. Accessed April 2024.

of Appendix A4 of the CALGreen Code, CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements, stricter water conservation, 65 percent diversion of construction and demolition waste, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 80 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

It should also be noted that the CALGreen standards include what is commonly called California's 2020 Solar Mandate, which requires all newly built homes to install solar photovoltaic systems. The mandate applies to "all low-rise residential occupancies including single-family homes, duplexes, garden apartments, and other housing types with three or fewer habitable stories." The mandate includes multi-family housing such as apartment buildings as long as the buildings are under three stories. Sizing requirements are based on the floor area of the home and the climate zone. The solar panel systems must be sized to provide for the full annual energy usage of the home. In order to increase home energy efficiency, sizes of solar photovoltaic systems would generally be anticipated to range between 2.7 kilowatts and 5.7 kilowatts under the new Title 24 requirements. The average system sizes take into consideration the fact that new homes would also include other technology that would enable them to be more energy-efficient overall. Effective in January 2023, California's Solar Mandate also requires that all single-family homes be electric-ready. The CALGreen standards also include guidance for installing battery storage systems. The battery portion of the mandate currently only applies to select businesses.

Local Regulations

The following are the regulatory agencies and regulations pertinent to the proposed project on a local level.

Feather River Air Quality Management District

With regard to air quality, the FRAQMD is the primary agency responsible for planning to meet NAAQS and CAAQS in Yuba and Sutter counties. The FRAQMD adopts and enforces controls on stationary sources of air pollutants through permit and inspection programs, and regulates agricultural burning. The FRAQMD develops rules and regulations for stationary sources and equipment, prepares emissions inventories and air quality management planning documents, and conducts source testing and inspections. Other responsibilities of the FRAQMD include monitoring air quality and responding to citizen air quality complaints. Projects within the FRAQMD must comply with all rules and regulations, including, but not limited to, the following:

- Regulation IV – Stationary Emissions Sources Permit System and Registration: Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from FRAQMD prior to equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or internal combustion engine could require a permit. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment, etc.) with an internal combustion engine over 50 horsepower are required to have a FRAQMD permit or a CARB portable equipment registration. Other general types of uses that require a permit include, but are not limited to fumigation chambers, gasoline tanks and dispensing, spray booths, and operations that generate airborne particulate emissions.

- Rule 3.0 – Visible Emissions: As provided by Section 41701 of the California Health and Safety Code, a person shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminants for a period or periods aggregating more than three minutes in any one hour which is a.) as dark or darker in shade as that designated as No. 2 on the Ringlemen Chart published by the United States Bureau of Mines; or b.) of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 'a.'
- Rule 3.2 – Particulate Matter Concentration: A person shall not discharge into the atmosphere from any source, except as allowed by Rule 3.1, section 'a' and 'c' of these Rules and Regulations, particulate matter in excess of 0.3 grains per cubic foot of gas at standard conditions. When the source involves a combustion process, the concentration must be calculated to 12 percent CO_2. In measuring the combustion contaminants from incinerators used to dispose of combustible refuse by burning the CO_2 produced by combustion of any liquid or gaseous fuels shall be excluded from the calculation to 12 percent of CO_2.
- Rule 3.3 – Dust and Fumes: A person shall not discharge in any one hour from any source whatsoever, except as provided by Rule 3.1, section 'a' and 'c,' dust or fumes in total quantities in excess of the amounts specified in Table 4.1-6.
- Rule 3.9 – Organic Liquid Storage and Transfer: The rule limits emissions of volatile organic compounds (VOCs) from the storage and transfer of organic liquids. The rule applies to any storage tank with a capacity of 250 gallons or greater that stores or transfers an organic liquid with a true vapor pressure of 1.5 pound per square inch (psi) or greater.
- Rule 3.15 – Architectural Coatings: Except as provided in subsections C.2 or C.3 of Rule 3.15, with respect to VOC content limits, no person shall a.) manufacture, blend, or repackage within the FRAQMD; b.) supply, sell, or offer for sale for use within the district; or c.) solicit for application or apply within the FRAQMD, any architectural coating with VOC content in excess of the corresponding limit specified in Table 1 of Rule 3.15, after the specified effective date in Table 1 [of the FRAQMD Guidelines].
- Rule 3.16 – Fugitive Dust Emissions: A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land, or solid waste disposal operation.

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. Such an advisory role may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigation for potentially significant impacts. The FRAQMD has not adopted specific guidance or thresholds applicable to the analysis of a project's contribution to GHG emissions or associated climate change effects.

Air Quality Attainment Plan

The FRAQMD is part of the Sacramento Federal Nonattainment Area (SFNA) for ozone, which also includes the Sacramento Metropolitan Air Quality Management District (SMAQMD), El Dorado County Air Quality Management District (EDCAQMD), Yolo Solano Air Quality Management District (YSAQMD) and Placer County Air District (PCAPCD). As a part of the SFNA, the FRAQMD works with the other local air districts within the Sacramento area to develop a regional air quality management plan under the FCAA requirement. The regional air quality management plan is called the SIP which describes and demonstrates how the FRAQMD, as well as the SFNA, would attain the required federal ozone standard by the proposed attainment deadline. The attainment plans currently in effect for FRAQMD are the 2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Reasonable Further Progress Plan and the 2023 Yuba City-Marysville Planning Area $PM_{2.5}$ Maintenance Plan.

Table 4.1-6
FRAQMD Rule 3.3 – Maximum Dust Discharge Rates

Process Weight		Rate of Emission
Pound per Hour (lb/hr)	**Ton per Hour (ton/hr)**	**Pound per Hour (lb/hr)**
100	0.15	0.551
200	0.1	0.877
400	0.2	1.4
600	0.3	1.83
800	0.4	2.22
1,000	0.5	2.58
1,500	0.75	3.38
2,000	1	4.1
2,500	1.25	4.7
3,000	1.5	5.38
3,500	1.75	5.96
4,000	2	6.52
5,000	2.5	7.58
6,000	3	8.56
7,000	3.5	9.49
8,000	4	10.4
9,000	4.5	11.2
10,000	5	12
12,000	6	13.6
16,000	8	16.5
18,000	9	17.9
20,000	10	19.2
30,000	15	25.2
40,000	20	30.5
50,000	25	35.4
60,000	30	40
70,000	35	41.3
80,000	40	42.5
90,000	45	43.6
10,000	50	44.6
120,000	60	46.3
140,000	70	47.8
180,000	80	49
200,000	100	51.2

***Source:** Spaethe, Sondra, Planning and Engineering Supervisor, Feather River Air Quality Management District. Personal Communication [email] with Briette Shea, Associate/Air Quality Technician, Raney Planning & Management, Inc. May 21, 2020.*

In addition to the foregoing Federal plans, the FRAQMD is also party to the 2018 Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan, which was specifically developed to cover the planning areas of Shasta, Tehama, Glenn, Butte, Colusa, and Feather

River for ozone and a California Particulate Matter Plan in accordance with SB 656 to reduce PM_{10}. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals.

The 2017 Sacramento Regional 2008 Ozone Attainment and Reasonable Further Progress Plan was adopted by the FRAQMD Board of Directors on October 2, 2017. The 2023 Yuba City-Marysville Planning Area $PM_{2.5}$ Maintenance Plan was adopted by the FRAQMD Board of Directors on April 3, 2023. The 2018 Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan was adopted by the FRAQMD Board of Directors on August 5, 2019. The California Particulate Matter Plan was adopted by the FRAQMD Board in July 2005.

City of Wheatland General Plan

The General Plan sets forth various goals, policies and programs that would apply to projects in the City of Wheatland. The following goals, policies and actions are applicable to the proposed project.

Goal 8.E To protect and improve air quality in the Wheatland area with the goal of attaining federal and State health-based air quality standards.

Policy 8.E.1. The City shall cooperate with other agencies to develop a consistent and effective approach to regional air quality planning and management.

Policy 8.E.2. The City shall support the Feather River Air Quality Management District in its development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds, and rules to more adequately address the air quality impacts of new development.

Policy 8.E.3. The City shall require major new development projects to submit an air quality analysis for review and approval. Based on this analysis, the City shall require appropriate mitigation measures.

Policy 8.E.4. In cooperation with the Feather River Air Quality Management District, the City shall develop emission thresholds to serve as the basis for requiring air quality analysis and mitigation.

Policy 8.E.5. The City shall solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality. The City shall submit development proposals to the Feather River Air Quality Management District for review and comment in compliance with the California Environmental Quality Act (CEQA) prior to consideration by the City.

Policy 8.E.6. In reviewing project applications, the City shall require consideration of alternatives or amendments that reduce emissions of air pollutants.

Goal 8.G To encourage energy conservation in new and existing developments.

Policy 8.G.1. In addition to the energy regulations of Title 24, the City shall encourage the energy efficiency of new development. Possible energy efficient design techniques include: provisions for solar access; building sitting to maximize natural heating and cooling; and landscaping to aid passive cooling and protection from winter winds.

Policy 8.G.2. The City shall encourage the planting of shade trees along all City streets to reduce radiation heating.

Policy 8.G.3. The City shall coordinate with local utility providers to promote public education energy conservation programs.

Policy 8.G.4. The City will promote local and State programs that strive to reduce the consumption of natural or manmade energy sources.

Policy 8.G.5. The City shall ensure that new development incorporates open space areas that provide community and neighborhood identity and insulate conflicting land uses and noise generators.

City of Wheatland Climate Action Plan

On December 11, 2018, the City of Wheatland City Council adopted a CAP to establish consistency between the City of Wheatland's policies and the State's GHG reduction requirements mandated by AB 32 and SB 32.[26] The ultimate goal of the CAP is to achieve the identified reductions in emissions by the target years 2030 and 2050. Reduction targets in the CAP call for a 65.7 percent reduction below baseline 2010 levels of GHG emissions by 2030. Based upon the aforementioned GHG reduction goals, the City of Wheatland has identified and quantified GHG emissions reduction strategies, which include climate change adaptation strategies, measures, and actions. The reduction strategies include strategies to be implemented by new development, the municipal government, and existing development to meet the reduction goals. Projects showing consistency with the CAP reduction strategies are considered to have a less-than-significant GHG emissions impact. The CAP also creates a framework for documenting, coordinating, measuring, and adapting efforts moving forward.

In addition to the emissions reduction strategies presented in the CAP, the new development emissions thresholds, when implemented, would ensure that the City's buildout emissions would meet the 2017 Scoping Plan's recommended per capita emissions goals. Consequently, buildout of the City using the new development thresholds would result in citywide emissions in compliance with the 2017 Scoping Plan, AB 32, and SB 32.

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[26] City of Wheatland. *City of Wheatland Climate Action Plan*. October 2018.

Implementation of the CAP is ensured by using a sustainability checklist, which includes a requirement that certain types of new development achieve the new development emissions thresholds. Developments required to show compliance with the emissions thresholds would be able to simply complete the sustainability checklist, and in so doing, provide quantification of anticipated GHG emissions resulting from the proposed development. If the proposed development is shown to result in GHG emissions below the City's thresholds in the years 2030 and 2050, the development would satisfy the requirements of the CAP and further analysis would not be required.

4.1.4 IMPACTS AND MITIGATION MEASURES

The standards of significance and methodology used to analyze and determine the proposed project's potential project-specific impacts related to air quality and GHG emissions are described below. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, for the purposes of this EIR, an impact related to air quality and GHG emissions is considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

Criteria Pollutant Emissions and Toxic Air Contaminant Emissions

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to determine whether the project would have a significant impact on air quality. The attainment plans currently in effect for FRAQMD are the 2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Reasonable Further Progress Plan and the 2023 Yuba City-Marysville Planning Area PM2.5 Maintenance Plan. In addition to the foregoing Federal plans, the FRAQMD is also party to the 2018 Northern Sacramento Valley Planning Area Triennial Air Quality Attainment Plan, which was specifically developed to cover the planning areas of Shasta, Tehama, Glenn, Butte, Colusa, and Feather River for ozone and a California Particulate Matter Plan in accordance with SB 656 to reduce PM_{10}.

Nearly all development projects in the SVAB region have the potential to generate air pollutants that may increase the difficulty of attaining federal and State AAQS. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, FRAQMD has developed the Indirect Source Review

Guidelines, which includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors and PM_{10}, as the area is under nonattainment for ozone and PM_{10}.

The FRAQMD's recommended thresholds of significance for ROG, NO_X, and PM_{10} are summarized in Table 4.1-7 below.

Table 4.1-7
FRAQMD Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds
ROG	25 lbs/day multiplied by the project length, not to exceed 4.5 tons/year	25 lbs/day
NO_X	25 lbs/day multiplied by the project length, not to exceed 4.5 tons/year	25 lbs/day
PM_{10}	80 lbs/day	80 lbs/day

Note: Construction-related ROG and NO_X emissions may be averaged over the life of the project, but may not exceed 4.5 tons/year.

Source: FRAQMD, June 7, 2010.

As shown in the table, the FRAQMD's recommended threshold for construction-related emissions of ROG and NO_X is 25 lbs/day multiplied by the total length of the construction period of a project. Construction of the proposed project is anticipated to occur over four phases, with each phase occurring over a period of approximately 105 weeks, with five working days per week, for a total of approximately 2,100 days of construction; thus, the maximum allowable total construction-related emissions of ROG and NO_X pursuant to the FRAQMD thresholds of significance would be 52,500 lbs over the entire construction period (2,100 days X 25 lbs/day = 52,500 lbs). However, the maximum allowable total construction emissions of 52,500 lbs would equate to 26.25 tons, which exceeds the annual threshold of 4.5 tons/year. Therefore, this analysis applies 4.5 tons/year as the threshold of significance for construction-related ROG and NO_X emissions.

The FRAQMD established thresholds of significance for CEQA purposes to achieve and maintain the NAAQS and CAAQS. Because an AAQS is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the AAQS, a project that complies with the thresholds established by a local air district, such as the FRAQMD, would not result in adverse effects to human health related to criteria pollutant emissions.

For the evaluation of health risks, the FRAQMD directs lead agencies to use the recommendations set forth in the CARB's Handbook and the California Air Pollution Control Officers Association's Health Risk Assessments for Land Use Projects. The FRAQMD has not formally adopted thresholds of significance for health risks associated with changes in land use or construction projects. However, the FRAQMD has informally approved the use of the stationary source health risk thresholds of significance (see Table 4.1-8) for the evaluation of land use or construction projects.[27]

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[27] Spaethe, Sondra, Planning and Engineering Supervisor, Feather River Air Quality Management District. Personal Communication [phone] with Briette Shea, Associate/Air Quality Technician, Raney Planning & Management, Inc. May 21, 2020.

Table 4.1-8
Thresholds of Significance for Health Risks

Risk Factor	Threshold
Cancer	Increased cancer risk of >10.0 cases per million persons
Non-Cancer	Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute)

Source: FRAQMD. AB2588 Air Toxics "Hot Spots" Program Annual Report. November 30, 2020.

Ascertaining cancer risk, or similar measurements of health effects from air pollutants, is very difficult for regional pollutants such as the ozone precursors ROG and NO_X. This challenge was addressed in Sierra Club v. County of Fresno (2018) 6 Cal.5th 502, 510, 517-522. In that case, the California Supreme Court held generally that an EIR should "make a reasonable effort to substantively connect a project's air quality impacts to likely health consequences." A possible example of such a connection would be to calculate a project's "impact on the days of nonattainment per year." But the court recognized that there might be scientific limitations on an agency's ability to make the connection between air pollutant emissions and public health consequences in a credible fashion, given limitations in technical methodologies. Thus, the court acknowledged that another option for an agency preparing an EIR might be "to explain why it was not feasible to provide an analysis that connected the air quality effects to human health consequences."

Here, the FRAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of emissions in Yuba County. At present, the FRAQMD has not provided any methodology to assist local governments in reasonably and accurately assessing the specific connection between mass emissions of ozone precursors (e.g., ROG and NO_X) and other pollutants of concern on a regional basis and any specific effects on public health or regional air quality concentrations that might result from such mass emissions.

Ozone concentrations, for instance, depend upon various complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground level ozone concentrations related to the NAAQS and CAAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that detail regional programs to attain the AAQS. However, if a project within the FRAQMD exceeds the regional significance thresholds, the proposed project could contribute to an increase in health effects in the basin until the attainment standards are met in the SVAB and SFNA.

Notably, during the litigation process that led to the California Supreme Court decision in Sierra Club v. County of Fresno, the San Joaquin Valley Air Pollution Control District (SJVAPCD) submitted an amicus curiae brief that provided scientific context and expert opinion regarding the feasibility of performing regional dispersion modeling for ozone. In the brief, SJVAPCD states that "CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible." As SJVAPCD explains:

> Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period. Because the NAAQS are focused on achieving a particular

> concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.
>
> For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley. At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor emissions Valley wide. Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.
>
> The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which all of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.
>
> Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the [SJVAB] can accommodate without affecting the attainment date for the NAAQS. The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources must “offset” their emissions…Thus, the CEQA air quality analysis for criteria air pollutants is not really a localized, project-level impact analysis but one of regional cumulative impacts.

The brief explains that these CEQA thresholds of significance are not intended to be applied such that any localized human health impact associated with a project’s regional pollutant emissions could be identified. Rather, CEQA thresholds of significance are used to determine whether a project’s emissions would obstruct a region’s capability of attaining the NAAQS and CAAQS according to the emissions inventory prepared in a SIP, which is then submitted and reviewed by CARB and CalEPA. This sentiment is corroborated in an additional brief submitted by the South Coast Air Quality Management District. Based on the expert analyses submitted by these leading air districts, the City has concluded that it is not scientifically feasible to predict in a meaningful manner how mass emissions of pollutants of regional concern (e.g., ozone precursors) from a project of the size of the proposed project could lead to specific public health consequences, changes in pollutant concentrations, or changes in the number of days for which the SVAB and SFNA will be in nonattainment for regional pollutants.

Greenhouse Gas Emissions

At this time, the FRAQMD has not adopted numerical thresholds of significance for GHG emissions that would apply to the project. The FRAQMD, however, recommends that all projects subject to CEQA review be considered in the context of GHG emissions and climate change impacts, and that CEQA documents include a quantification of GHG emissions from all project sources, as well as including measures to minimize and mitigate GHG emissions as feasible. The project would generate GHG emissions through short-term construction activities, as well as long-term operations.

The proposed project is evaluated for impacts related to GHG emissions using the sustainability checklist adopted as part of the City’s CAP. If the proposed project is determined to meet the requirements of the sustainability checklist, then the project would result in less-than-significant impacts related to GHG emissions.

Method of Analysis

A comparison of project-related emissions to the thresholds discussed above shall determine the significance of the potential impacts to air quality and climate change resulting from the proposed project. Emissions attributable to the proposed project which exceed the significance thresholds could have a significant effect on regional air quality and the attainment of the federal and State AAQS. Where potentially significant air quality impacts are identified, mitigation measures are described that would reduce or eliminate the impact.

Construction Emissions

Construction emissions associated with the proposed project were estimated using the California Emissions Estimator Model (CalEEMod), a web-based software, Version 2022.1.1.22. CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions from land use projects. The model applies inherent default values for various land uses, including trip generation rates based on the Institute of Transportation Engineers (ITE) Manual, vehicle mix, trip length, average speed, etc. However, where project-specific data was available, such data was input into the model. For instance, based on applicant-provided information, construction was assumed to commence in April of 2025 and occur over an approximately eight-year period.

The results of the construction emissions modeling were compared to the standards of significance discussed above in order to determine the associated level of impact. All modeling results are included in Appendix C to this EIR.

Operational Emissions

CalEEMod, Version 2022.1.1.22 was used to estimate emissions generated from the operation of the proposed project. Based on applicant provided information, the project was estimated to be fully operational by the year 2034. TJKM provided project-specific trip generation rates and vehicle miles traveled (VMT), which were applied to the project modeling. In addition, the modeling assumed that all fireplaces installed in the proposed residences would be natural gas.

The results of the operational emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All modeling results are included in Appendix C to this EIR.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above. It should be noted that GHG emissions are inherently cumulative; thus, the discussion of GHG impacts is included under the Cumulative Impacts and Mitigation Measures section below.

4.1-1 Conflict with or obstruct implementation of the applicable air quality plan during project construction. Based on the analysis below, the impact is *less than significant*.

During construction of the project, various types of equipment and vehicles would temporarily operate on the project site. Construction-related emissions would be generated from construction equipment, vegetation clearing and earth movement activities, construction workers' commute, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM_{10} emissions. As construction of the proposed project would generate emissions of criteria air pollutants, including ROG, NO_X, and PM_{10} intermittently within the site and in the vicinity of the site, until all construction has been completed, construction is a potential concern, as the FRAQMD includes nonattainment areas for ozone and PM_{10}.

The proposed project is required to comply with all FRAQMD rules and regulations, including Rule 3.0 related to visible emissions and Rule 3.2 related to particulate matter concentration. In addition, all projects under the jurisdiction of the FRAQMD are recommended to implement the following Standard Construction Mitigation Measures provided in the FRAQMD's Indirect Source Review Guidelines:

1. Implement the Fugitive Dust Control Plan.
2. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0).
3. The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of on-site operation.
4. Limiting idling time to five minutes.
5. Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
6. Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
7. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the CARB or FRAQMD to determine registration and permitting requirements prior to equipment operation at the site.

The City would require that the foregoing Standard Construction Mitigation Measures be implemented during construction, and be included in all construction contracts, which would help reduce criteria pollutant emissions during project construction.

The maximum construction-related emissions associated with the proposed project were estimated and are presented in Table 4.1-9.

Table 4.1-9
Maximum Unmitigated Construction Emissions

Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	0.35 tons/year	4.5 tons/year	**NO**
NO_X	2.03 tons/year	4.5 tons/year	**NO**
PM_{10}	4.03 lbs/day	80 lbs/day	**NO**
Source: CalEEMod, April 2024 (see Appendix C).			

As noted previously, CalEEMod was used to estimate criteria pollutant emissions associated with construction of the proposed project. Although FRAQMD recommends that all construction activity within the SVAB implement the above listed Standard Construction Mitigation Measures, the proposed project was modeled without the inclusion of such measures to provide a conservative, worst-case emissions scenario.

As shown in the table above, the proposed project's maximum construction emissions would be below the applicable FRAQMD thresholds of significance for all criteria pollutants. Accordingly, the proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation, and construction of the proposed project would be considered to result in a ***less-than-significant*** impact related to air quality.

Mitigation Measure(s)

None required.

4.1-2 Conflict with or obstruct implementation of the applicable air quality plan during project operation. Based on the analysis below, even with implementation of mitigation, the impact would remain *significant and unavoidable*.

As discussed above, due to the nonattainment designations of the area, the FRAQMD has developed plans to attain the State and federal standards for ozone and particulate matter. The currently applicable air quality plans are the 2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Reasonable Further Progress Plan and the 2023 Yuba City-Marysville Planning Area $PM_{2.5}$ Maintenance Plan. Adopted FRAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with the applicable air quality plan. Thus, if a project's operational emissions exceed the FRAQMD's mass emission thresholds, a project would be considered to conflict with or obstruct implementation of the FRAQMD's air quality planning efforts.

Operational emissions of ROG, NO_X, and PM_{10} would be generated by the proposed project from both mobile and stationary sources. Emissions related to operation of the proposed project would include area sources such as architectural coatings, landscape maintenance equipment exhaust and consumer products (e.g., deodorants, detergents, hair spray, cleaning products, spray paint, insecticides, floor finishes, polishes, etc.). The most significant source of emissions related to the proposed project would be from mobile and area sources. As discussed in the Method of

Analysis section above, to capture the potential emissions related to mobile sources from the proposed project, the project-specific trip generation rates and VMT estimates prepared by TJKM were applied to the project modeling. In addition, the modeling assumed that all fireplaces installed in the proposed residences would be natural gas.

The maximum unmitigated operational emissions associated with the proposed project are presented in Table 4.1-10. As shown in the table, the proposed project's maximum unmitigated operational emissions of PM_{10} would be below the applicable FRAQMD threshold of significance. However, the proposed project's maximum unmitigated operational emissions of ROG and NO_X would exceed the applicable FRAQMD thresholds of significance.

Table 4.1-10
Maximum Unmitigated Operational Emissions

Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	57.7 lbs/day	25 lbs/day	**YES**
NO_X	41.9 lbs/day	25 lbs/day	**YES**
PM_{10}	61.2 lbs/day	80 lbs/day	**NO**

Source: CalEEMod, April 2024 (see Appendix C).

Accordingly, the proposed project could violate an air quality standard or contribute substantially to an existing or projected air quality violation, and operation of the proposed project would be considered to result in a ***significant*** impact related to air quality.

Mitigation Measure(s)

The majority of operational ROG emissions generated by the proposed project are associated with area sources (33.0 lbs/day) and the majority of operational NO_X emissions generated by the proposed project are associated with mobile sources (25.5 lbs/day). Implementation of Mitigation Measure 4.1-2(a) would reduce the proposed project's operational area source emissions through the use of zero-VOC paints, finishes, adhesives, and cleaning supplies. Additionally, implementation of Mitigation Measure 4.3-3 as set forth in the Transportation chapter of this EIR, which requires implementation of Transportation Demand Management (TDM) strategies to reduce home-based VMT per capita that would be generated by the proposed project by 10.2 percent, would further reduce the proposed project's operational mobile source emissions. Operational emissions with implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b) are shown in Table 4.1-11.

Table 4.1-11
Maximum Mitigated Operational Emissions

Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	56.9 lbs/day	25 lbs/day	**YES**
NO_X	39.7 lbs/day	25 lbs/day	**YES**
PM_{10}	55.1 lbs/day	80 lbs/day	**NO**

Source: CalEEMod, April 2024 (see Appendix C).

However, as shown in Table 4.1-11, even with implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b), the proposed project's operational ROG and NO_X emissions would continue to exceed the applicable thresholds of significance.

Possible additional mitigation measures for further reducing consumer product emissions of ROG could include limitations on consumer products at the site (e.g., amounts, types, etc.); however, such mitigation cannot be feasibly enforced or verified. The sale, manufacturing, substance control, and content limitation (such as VOC limits) of consumer products are regulated by federal and State government agencies. The FRAQMD is charged with local enforcement of regulations regarding consumer products that are associated with effects on air quality. The FRAQMD is also charged with developing measures to offset potential effects on regional air quality through their planning efforts. For example, on October 2, 2023, FRAQMD adopted the Sacramento Regional 2015 NAAQS 8-Hour Ozone Attainment Plan, which includes existing and new control strategies intended to provide the necessary future emission reductions to meet the ozone NAAQS. Because the proposed project would require approval of a General Plan Amendment to change the site's designation from Low Density Residential (LDR) to Low-Medium Density Residential (LMDR) and Medium Density Residential (MDR), the associated emissions of the additional potential residential units have not been anticipated in the regional air quality plans. As such, any future updates to the air quality plans would have to take into account the emission associated with buildout of the proposed project (if approved) and include additional strategies to offset the overall regional emissions of ozone, including ROG emissions, through local and/or regional programs.

Because additional feasible mitigation for the reduction of the proposed project's operational ROG and NO_X emissions to below the applicable thresholds of significance is not currently available, and because the feasibility and relative effectiveness of Mitigation Measures 4.1-2(a) and (b) is not conclusive, even with implementation of the following mitigation measures, the above impact would remain *significant and unavoidable*.

4.1-2(a) *Prior to issuance of any building permits, the project applicant shall ensure that only zero-VOC paints, finishes, adhesives, and cleaning supplies shall be used for all buildings on the project site.*

The aforementioned requirements shall be noted on the project Improvement Plans, Conditions, Covenants and Restrictions (CC&Rs), and the Informational Sheet filed with the Final Subdivision Map(s), and submitted for review and approval by the City of Wheatland Community Development Department.

4.1-2(b) *Implement Mitigation Measure 4.3-3.*

4.1-3 Expose sensitive receptors to substantial pollutant concentrations. Based on the analysis below, the impact is *less than significant*.

The major pollutant concentrations of concern are localized CO emissions, TAC emissions, and criteria pollutant emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Concentrations of CO approaching the AAQS are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood.

Although FRAQMD does not have an established threshold for CO, according to the SMAQMD's CEQA Guidelines, emissions of CO are generally of less concern than other criteria pollutants, as operational activities are not likely to generate substantial quantities of CO, and the SVAB has been in attainment for CO for multiple years.[28] Additionally, the PCAPCD, which has jurisdiction over a portion of the SVAB and is adjacent to the FRAQMD to the east, has a screening level for localized CO impacts. According to the PCAPCD screening levels, a project could result in a significant impact if the project would result in CO emissions from vehicle operations in excess of 550 lbs/day. Based on the CalEEMod estimates calculated for the proposed project, project operations would result in maximum mobile source CO emissions of 249 lbs/day, which is significantly lower than the PCAPCD screening level. Therefore, based on the guidance of the SMAQMD and PCAPCD, which both have authority over a portion of the SVAB and are adjacent to the FRAQMD, the proposed project would not expose sensitive receptors to substantial concentrations of localized CO and impacts related to localized CO emissions would be less than significant.

TAC Emissions

As stated above, if a project would introduce a new source of TACs, a detailed health risk assessment may be required. The FRAQMD considers an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 to be a significant impact related to TACs.

The nearest sensitive receptors to the project site are the single-family residences located to the north and west of the project site, with the closest residential units located west of Sixth Street, approximately 200 feet from where project construction would occur. Thus, activities related to the construction and operation of the proposed project are analyzed to determine whether the proposed project would expose the nearby sensitive receptors to substantial TAC emissions.

The CARB has identified DPM from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are

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[28] Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment, Chapter 4: Operational Criteria Air Pollutant and Precursor Emissions*. June 2020.

primarily associated with long-term exposure and associated risk of contracting cancer.

Construction-related activities have the potential to generate concentrations of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. The construction period would be temporary and would occur over a relatively short duration in comparison to the operational lifetime of the proposed project. While methodologies for conducting health risk assessments are associated with long-term exposure periods (e.g., over a 30-year period or longer), construction activities associated with the proposed project were estimated to occur over an approximately eight-year period. Additionally, the proposed project would be constructed over the course of four development phases. As such, while overall construction activity would occur over approximately eight years, construction of any phase of the project would occur over a shorter period of time. Furthermore, construction would be limited to weekdays between 7:00 AM and 10:00 PM, pursuant to Section 8.04.030(H) of the City's Municipal Code.

Although some receptors are located in relatively close proximity to the project site boundary, the overall project site is approximately 148.70-acres. Considering the large development area, off-road construction equipment would operate at various locations within the project site intermittently. For instance, construction equipment operating in the southern portion of the project site would be approximately 0.75-mile south of the nearest existing sensitive receptor. Therefore, due to project construction being phased, only portions of the site would be disturbed at a time throughout the construction period, with operation of construction equipment occurring intermittently throughout the course of a day, rather than continuously at any one location on the project site.

All construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation.[29] The In-Use Off-Road Diesel Vehicle Regulation includes emissions reducing requirements such as limitations on vehicle idling, disclosure, reporting, and labeling requirements for existing vehicles, as well as standards relating to fleet average emissions and the use of Best Available Control Technologies. Project construction would also be required to comply with all applicable FRAQMD rules and regulations, including Rule 3.0 related to visible emissions and Rule 3.2 related to particulate matter concentration, and the Standard Construction Mitigation Measures provided in the FRAQMD's Indirect Source Review Guidelines.

Considering the intermittent nature of construction equipment operating within an influential distance to the nearest sensitive receptors, the duration of construction activities in comparison to the operational lifetime of the project, the typical long-term exposure periods associated with conducting health risk assessments, and compliance with regulations, the likelihood that any one nearby sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low.

Furthermore, as discussed above, the proposed project's construction-related emissions would be below the applicable mass emissions thresholds of significance

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[29] California Code of Regulations, Title 13, Article 4.8, Chapter 9, Section 2449.

for PM_{10}. According to CARB, more than 90 percent of DPM is less than one micrometer in diameter,[30] and, thus, DPM is a subset of $PM_{2.5}$, which comprises a portion of PM_{10}. As a California statewide average, DPM comprises about eight percent of $PM_{2.5}$ in outdoor air,[31] and would represent an even smaller percentage of PM_{10} emissions. Considering that the proposed project's construction-related PM_{10} emissions, which include emissions of DPM, would be below the FRAQMD's thresholds of significance, construction of the proposed project would not be expected to generate substantial DPM emissions such that an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 would occur.

Based on the above, the proposed project would not expose sensitive receptors to substantial concentrations of DPM during construction.

Operational-related emissions of TACs are typically associated with stationary diesel engines or land uses that involve heavy truck traffic or idling. The proposed residences would not involve long-term or frequent operations of any stationary diesel engines. Thus, the proposed project would not generate any substantial pollutant concentrations related to TAC emissions during operations.

Criteria Pollutants

As discussed in the Existing Environmental Setting section and summarized in Table 4.1-1, criteria pollutant emissions can cause negative health effects. With regard to the proposed project, the principal criteria pollutants of concern are localized CO, ozone, and PM. As discussed above, the proposed project is not anticipated to result in impacts related to localized exposure of sensitive receptors to substantial concentrations of CO. Unlike CO and many TACs, due to atmospheric chemistry and dynamics, ozone and atmospheric PM typically act to impact public health on a cumulative and regional level, rather than a localized level. Due to the cumulative and regional nature of effects from criteria pollutants, the analysis of potential health effects of criteria pollutants is further discussed in Impact 4.1-5.

Conclusion

Based on the above analysis, the proposed residential land uses would not be anticipated to result in the production of substantial concentrations of TACs, including DPM, localized CO, or criteria pollutants. Therefore, the proposed project would not result in the exposure of sensitive receptors to substantial pollutant concentrations, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

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[30] California Air Resources Board. *Inhalable Particulate Matter and Health ($PM_{2.5}$ and PM_{10}).* Available at: https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health. Accessed March 2024.

[31] California Air Resources Board. *Overview: Diesel Exhaust & Health.* Available at: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health. Accessed March 2024.

4.1-4 Result in other emissions (such as those leading to odors) affecting a substantial number of people. Based on the analysis below, the impact is *less than significant*.

Pollutants of principal concern include emissions leading to odors, visible emissions (including dust), or emissions considered to constitute air pollutants. Air pollutants have been discussed in Impacts 4.1-1 through 4.1-3 above. Therefore, the following discussion focuses on emissions of odors and visible emissions.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative methodologies to determine the presence of a significant odor impact are difficult. Certain land uses such as wastewater treatment and conveyance facilities, landfills, confined animal facilities, composting operations, food manufacturing plants, refineries, and chemical plants have the potential to generate considerable odors. Operations of the proposed residential units would not introduce any such activities.

Diesel fumes from construction equipment are often found to be objectionable; however, construction is temporary, and operation of equipment is regulated by federal, State, and local standards, including FRAQMD rules and regulations. As discussed previously, buildout of the proposed project would involve construction activity in different areas of the approximately 148.7-acre project site throughout the construction period. Therefore, construction equipment would operate at varying distances from existing sensitive receptors, and potential odors from such equipment would not expose any single receptor to odors for a substantial period of time. Furthermore, construction activity would be restricted to certain hours of the day pursuant to the City of Wheatland Municipal Code, Section 8.04.030(H), which would limit the times of day during which construction-related odors would potentially be emitted. Due to the temporary duration of construction and the regulated nature of construction equipment, project-related construction activity would not result in the creation of substantial odors. Considering the above, construction and operation of the proposed project would not result in any noticeable objectionable odors.

It should be noted that the City of Wheatland WWTP, which is a land use type associated with the potential to generate odors, is located immediately adjacent to the southwest corner of the project site. Impacts of the existing environment on the proposed project is outside the purview of CEQA;[32] however, a brief discussion is provided herein for disclosure purposes.

The FRAQMD recommends a screening distance of two miles between a project and a WWTP.[33] Because the City of Wheatland WWTP is located immediately adjacent to the project site's southeastern boundary, the proposed project would not meet the recommended screening distance. However, the Wheatland Regional Sewer Pipeline Project has been approved, which involves plans to construct the necessary pipelines

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[32] See *Ballona Wetlands Land Trust v. City of Los Angeles,* [2011] 201 Cal.App.4th 455, 473.

[33] Feather River Air Quality Management District. *Indirect Source Review Guidelines*. June 7, 2010.

and pump stations to convey the City's wastewater to the Olivehurst Public Utility District's WWTP. Thus, the existing City of Wheatland WWTP is expected to be decommissioned, and, therefore, is not anticipated to be a permanent source of odors within the project vicinity. Additionally, the proposed project would include a 5.1-acre park in the southwestern corner of the project site, and a self-storage complex is currently planned outside of the project boundaries, between the Wheatland WWTP and the proposed residences. Thus, such uses would serve as a buffer zone between the WWTP and the proposed residences while the WWTP is still in use. It should also be noted that the nearest existing residences to the WWTP are located approximately 0.7-mile north, and odor complaints have not been received. Nonetheless, because the proposed project would not meet the FRAQMD's recommended screening distance, the City would include a Condition of Approval (COA) to require the project applicant to provide future homeowners of the proposed project with the following disclosure regarding potential nuisances associated with WWTP operations:

> The City of Wheatland Wastewater Treatment Plant (Wheatland WWTP) is located south of the Heritage Oaks Estates East subdivision. The Wheatland WWTP is a municipal wastewater treatment plant that removes contaminants from wastewater and converts it into effluent returned to the water cycle. The Wheatland WWTP is an industrial operation consisting of treatment facilities, chambers, aeration facilities, mechanical equipment, and outdoor storage basins. Depending on weather conditions and plant operations, residents nearby may experience occasional odor, noise, or light nuisances.

Visible Emissions (Including Dust)

As noted previously, all projects under the jurisdiction of FRAQMD are required to implement all applicable rules and regulations, including Rule 3.0, Rule 3.2, Rule 3.3, and Rule 3.16, as discussed above, that specifically relate to dust suppression.

In addition, all projects are required to submit and comply with an approved Fugitive Dust Control Plan prior to beginning any construction work. The approved plan serves as an acknowledgment by the project proponent of their duty to address State and local laws governing fugitive dust emissions and the potential for first offense issuance of a Notice of Violation by the air district where violations are substantiated by FRAQMD staff. The aforementioned measures would ensure that construction of the proposed project would not result in substantial emissions of dust or visible emissions.

Following project construction, the project site would not include any exposed topsoil. Thus, project operations would not include any substantial sources of dust or other visible emissions.

Conclusion

For the aforementioned reasons, construction and operation of the proposed project would not result in emissions (such as those leading to odors) adversely affecting a substantial number of people, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, “cumulative impacts” refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

A project’s emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The geographic context for the cumulative air quality analysis includes the City of Wheatland, Yuba County, and surrounding areas within the portion of the SVAB that is designated nonattainment for ozone and PM_{10}.

As mentioned above, global climate change is, by nature, a cumulative impact. Emissions of GHG contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change (e.g., sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts). A single project could not generate enough GHG emissions to contribute noticeably to a change in the global average temperature. However, the combination of GHG emissions from a project in combination with other past, present, and future projects could contribute substantially to the world-wide phenomenon of global climate change and the associated environmental impacts. Although the geographical context for global climate change is the Earth, for analysis purposes under CEQA, and due to the regulatory context pertaining to GHG emissions and global climate change applicable to the proposed project, the geographical context for global climate change in this EIR is limited to the State of California.

4.1-5 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). Based on the analysis below, even with implementation of mitigation, the project’s incremental contribution to the significant cumulative impact is *cumulatively considerable* and *significant and unavoidable.*

Buildout of the proposed project would lead to the release of emissions that would contribute to the cumulative regional air quality setting. The following section includes a discussion of the proposed project’s contribution to the cumulative operational emissions associated with implementation of the proposed project, and the cumulative health effects of exposure to criteria pollutants. It should be noted that because construction would occur over a relatively short time period as compared to the operational lifetime of the proposed project, construction emissions are not considered to be cumulative in nature.

Cumulative Operational Emissions

The FRAQMD’s jurisdictional area is designated as a nonattainment area for ozone and PM_{10}. By nature, air pollution is largely a cumulative impact. The emissions associated with the proposed project, in combination with other past, present, and reasonably foreseeable projects within the City of Wheatland, Yuba County, and surrounding areas, would contribute to the region's adverse air quality impacts on a cumulative basis, and could either delay attainment of AAQS or require the adoption of additional controls on existing and future air pollution sources to offset emission increases. Thus, the project's emissions of criteria air pollutants would contribute to cumulative regional air quality effects.

In developing thresholds of significance for air pollutants, FRAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, the project's emissions would be considered cumulatively considerable, resulting in a significant adverse incremental contribution to the region's existing air quality conditions. Therefore, if the project's emissions are below the FRAQMD's thresholds, then the project would not result in a cumulatively considerable increase of any criteria air pollutant. The proposed project's unmitigated cumulative contribution to regional emissions is equivalent to the project's unmitigated operational emissions, as presented in Table 4.1-10.

As discussed under Impact 4.1-2, the proposed project's unmitigated operational emissions of PM_{10} would be below the FRAQMD's applicable thresholds of significance. However, even with implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b), the proposed project would result in operational emissions of ROG and NO_X that would exceed the applicable FRAQMD thresholds of significance. Consequently, implementation of the proposed project could conflict with the FRAQMD's adopted attainment plans or inhibit attainment of regional AAQS. Thus, the proposed project would result in a significant incremental contribution towards cumulative air quality impacts.

Cumulative Health Effects of Criteria Pollutants

The AAQS presented in Table 4.1-2 are health-based standards designed to ensure safe levels of criteria pollutants that avoid specific adverse health effects. Because the Sutter County portion of the FRAQMD is designated as nonattainment for State and federal ozone, and State PM_{10}, the FRAQMD, along with other air districts in the SVAB region, has adopted federal and state attainment plans to demonstrate progress towards attainment of the AAQS. Full implementation of the attainment plans would ensure that the AAQS are attained and sensitive receptors within the SVAB are not exposed to excess concentrations of criteria pollutants. The FRAQMD's thresholds of significance were established with consideration given to the health-based air quality standards established by the AAQS, and are designed to aid the district in implementing the applicable attainment plans to achieve attainment of the AAQS. Thus, if a project's criteria pollutant emissions exceed the FRAQMD's mass emission thresholds of significance, a project would be considered to conflict with or obstruct implementation of the FRAQMD's air quality planning efforts, thereby delaying attainment of the AAQS. Because the AAQSs are representative of safe levels that avoid specific adverse health effects, a project's hinderance of attainment of the AAQS could be considered to contribute towards regional health effects associated with the existing nonattainment status of ozone and PM standards. However, as noted above, ascertaining cancer risk, or similar measurements of health effects from air pollutants, is very difficult for regional pollutants such as the ozone precursors ROG and NO_X, as there are scientific limitations on an agency's ability to make the connection between air pollutant emissions and public health consequences in a credible fashion, given limitations in technical methodologies. For example, ozone concentrations depend upon various complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground level ozone concentrations related to the NAAQS and CAAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds.

Nonetheless, as discussed in Impact 4.1-2, even with implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b), the proposed project would result in emissions that exceed the FRAQMD's thresholds of significance during operations. Consequently, implementation of the proposed project could conflict with the FRAQMD's adopted attainment plans or inhibit attainment of regional AAQS. Therefore, implementation of the proposed project could contribute towards regional health effects associated with the existing nonattainment status of ozone and PM standards.

Conclusion

Based on the above analysis, the proposed project's incremental contribution to the significant cumulative impact could be considered ***cumulatively considerable***.

Mitigation Measure(s)

The following mitigation measure would reduce operational ROG and NO_X emissions; however, as discussed under Impact 4.1-2 above, because the proposed project's operational ROG and NO_X emissions would still not be reduced to below the applicable thresholds of significance, and additional feasible mitigation sufficient to reduce the proposed project's operational ROG and NO_X emissions to below the FRAQMD's thresholds of significance is not currently available, even with implementation of the following mitigation measure, the proposed project's incremental contribution to the significant cumulative effect would remain *cumulatively considerable* and *significant and unavoidable*.

4.1-5 Implement Mitigation Measures 4.1-2(a) and 4.1-2(b).

4.1-6 Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Based on the analysis below, the project's incremental contribution to the significant cumulative impact is *less than cumulatively considerable*.

An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO_2 and, to a lesser extent, other GHG pollutants, such as CH_4 and N_2O. Sources of GHG emissions include area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste.

As noted previously, FRAQMD has not adopted quantitative thresholds of significance for GHG emissions. Consistent with FRAQMD guidance, GHG emissions associated with the proposed project have been quantified and included herein for informational purposes. Based on the modeling conducted for the proposed project, construction of the project was estimated to generate maximum unmitigated GHG emissions of 926 $MTCO_2e$/yr. The total unmitigated annual operational GHG emissions are presented in Table 4.1-12.

Table 4.1-12
Maximum Unmitigated Operational GHG Emissions

Source	Annual GHG Emissions ($MTCO_2e$/yr)
Mobile	9,453
Area	546
Energy	1,606
Water	59.9
Waste	153
Refrigerants	1.58
Total Annual GHG Emissions	**11,818**

Note: Rounding may result in slight differences in summation.

Source: CalEEMod, April 2024 (see Appendix C).

The proposed project is evaluated for impacts related to GHG emissions using the sustainability checklist adopted as part of the City's CAP. If the project is determined to meet the requirements of the sustainability checklist, then the project would result in less-than-significant impacts related to GHG emissions. The proposed project's consistency with the reduction strategy actions in the CAP is assessed in Table 4.1-13 below.

Table 4.1-13
CAP Consistency Checklist

Sustainability Checklist Requirements	Project Consistency
Does the project include bicycle, pedestrian, and/or transit infrastructure?	The proposed project would include a multimodal network for pedestrians and bicyclists by way of the Malone Paseo trail corridor and SR 65 landscape corridor. Malone Paseo would provide an internal north-to-south connection between the

(Continues on next page)

Table 4.1-13
CAP Consistency Checklist

Sustainability Checklist Requirements	Project Consistency
	proposed residential units along Malone Avenue. The corridor would include a 10-foot-wide meandering pathway for pedestrian and bicycle uses, and a landscape strip along one street edge. Sidewalk connections would also be provided throughout the site's internal roadway network.
Are at least 25 percent of all proposed roadways and intersections designed with traffic calming and congestion management measures?	The current site plans for the proposed project do not indicate the inclusion of traffic calming and congestion management infrastructure. However, implementation of Mitigation Measure 4.1-6 would require that the project applicant submit proof of compliance with this measure.
Does the project include Electric Vehicle charging infrastructure and parking spaces as required by State or City standards?	All on-site residences would be subject to the single-family residential off-street EV requirements included in the 2022 CALGreen Code. The 2022 CALGreen Code requires all single-family residences, townhomes, and duplexes be EV capable (i.e., each dwelling unit must have a listed raceway to accommodate a dedicated 208/40-volt branch circuit), which would be suitable for EV charging. Compliance with the 2022 CALGreen Code would ensure the proposed project is consistent with this measure.
Does the project include landscaping meeting the City or State's requirements for water efficient landscaping, including the planting and maintenance of trees?	Pursuant to City of Wheatland Municipal Code Section 18.60.130(E), property owners or their building or landscape designers, including anyone requiring a building or planning permit, plan check, or landscape design review from the city, who are constructing a new (single-family, multifamily, public, institutional, or commercial) project with a landscape area greater than 500 square feet (sf) shall comply with the requirements of the MWELO, as contained in 23 CCR, Division 2, Chapter 2.7. Thus, the proposed project would be required to comply with the MWELO, and, therefore, would be consistent with this measure.
If the project is located within a designated safe route to school, does the project include infrastructure supporting alternative transportation to school? Such infrastructure may include bicycle infrastructure (i.e. bicycle parking, bicycle lanes, bicycle paths)	The project site is not located within a designated safe route to school. Thus, this measure is not applicable to the proposed project.

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Table 4.1-13
CAP Consistency Checklist

Sustainability Checklist Requirements	Project Consistency
sidewalks, raised or signalized cross-walks, or areas for school busses to stop.	
Does the project meet the requirements of the California Building Energy Efficiency Standards?	The proposed project would be required to comply with the California Building Energy Efficiency Standards; thus, the proposed project would comply with this measure.
Does the project meet the requirements of the CALGreen Code?	The proposed project would be required to comply with the CALGreen Code; thus, the proposed project would comply with this measure.
Does the project include high efficiency lighting, such as LED lighting in outdoor spaces?	The proposed project would be required to comply with the California Building Energy Efficiency Standards and the CALGreen Code, which require such high efficiency lighting. Thus, compliance with the California Building Energy Efficiency Standards and the CALGreen Code would ensure consistency with this measure.
Does the project include water efficient fixtures?	The proposed project would be required to comply with the California Building Energy Efficiency Standards and the CALGreen Code, which require water efficient fixtures. Thus, compliance with the California Building Energy Efficiency Standards and the CALGreen Code would ensure consistency with this measure.
Does the project include the provision of recycling and green waste service?	Pursuant to City of Wheatland Municipal Code Chapter 8.14, refuse pickup, including recyclables, lawn and garden refuse, and trimmings from trees or shrubs, plants, or similar materials, is mandatory. The owner of any property within the areas in or from which refuse is created, accumulated or produced shall subscribe to and pay for refuse collection service to be rendered to such property by the collector. Thus, the proposed project would be required to include the provision of recycling and green waste service, and would comply with this measure.

Source: City of Wheatland Climate Action Plan, October 2018.

As noted previously, the City's CAP was established to ensure the City's compliance with the statewide GHG reduction goals required by AB 32 and SB 32. As demonstrated in Table 4.1-13, the proposed project would be consistent with the majority of the applicable City CAP requirements. Because compliance with the second checklist measure is reliant upon Mitigation Measure 4.1-6, without implementation of Mitigation Measure 4.1-6, the proposed project could conflict with the City's CAP. As such, the proposed project would be considered to generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Consequently, the project would result in a ***cumulatively considerable*** incremental contribution to significant impacts related to GHG emissions or climate change.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less than cumulatively considerable* level.

4.1-6 *Prior to approval of project Improvement Plans, proof of compliance with the following sustainability measure listed in the City CAP's Sustainability Checklist shall be submitted to the City of Wheatland Community Development Department for review and approval:*

- *At least 25 percent of all proposed roadways and intersections shall be designed with traffic calming and congestion management measures. Such measures could include, but shall not be limited to, the following:*
    - *Raised median islands;*
    - *Marked crosswalks;*
    - *Count-down signal timers;*
    - *Curb extensions;*
    - *Raised crosswalks;*
    - *Raised intersections;*
    - *Median islands;*
    - *Chicanes/chokers;*
    - *Rumble strips;*
    - *Roundabouts or mini-circles;*
    - *Speed tables;*
    - *Tight corner radii;*
    - *On-street parking; and*
    - *Planter strips with street trees.*

4.2 Noise

4.2 NOISE

4.2.1 INTRODUCTION

The Noise chapter of the EIR generally describes the existing noise environment in the project vicinity and identifies potential impacts and mitigation measures related to noise and vibration associated with construction and operation of the proposed project. The methods by which the potential impacts are analyzed is discussed, followed by the identification of potential impacts and the recommended mitigation measures designed to reduce significant noise and vibration impacts to less-than-significant levels, if required. The Noise chapter is primarily based on the Environmental Noise Assessment prepared for the proposed project by Saxelby Acoustics, LLC (see Appendix D of this EIR).[1] Other sources of information used in the chapter include the City of Wheatland General Plan[2] and General Plan EIR.[3]

4.2.2 EXISTING ENVIRONMENTAL SETTING

The Existing Environmental Setting section provides background information on noise and vibration, a discussion of acoustical terminology and the effects of noise on people, existing sensitive receptors in the project vicinity, existing sources and noise levels in the project vicinity, and groundborne vibration.

Fundamentals of Acoustics

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected, or undesired, and therefore, may be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

The decibel scale was devised to measure sound. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0.0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in dB correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. A strong correlation exists between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For such reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted

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[1] Saxelby Acoustics, LLC. *Environmental Noise Assessment, Village Farms EIR*. March 1, 2024.
[2] City of Wheatland. *City of Wheatland General Plan Policy Document*. Adopted July 2006.
[3] City of Wheatland. *City of Wheatland General Plan Final Environmental Impact Report*. May 2006.

sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, day/night average level (L_{dn}), and shows very good correlation with community response to noise.

The L_{dn} is based upon the average noise level over a 24-hour day, with a +10 dBA weighing applied to noise occurring during nighttime hours (10:00 PM to 7:00 AM). The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, the noise measurement tends to disguise short-term variations in the noise environment.

The Community Noise Equivalent Level (CNEL) is defined as the 24-hour average noise level with noise occurring during evening hours (7:00 PM to 10:00 PM) weighted by +5.0 dBA, and nighttime hours weighted by +10.0 dBA. The L_{max} is defined as the highest root-mean-square (RMS) sound level measured over a given period of time.

Table 4.2-1 below lists several examples of the noise levels associated with common situations.

Table 4.2-1
Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
N/A	110	Rock Band
Jet Fly-over at 300 meters (1,000 feet)	100	N/A
Gas Lawn Mower at 1 meter (3 feet)	90	N/A
Diesel Truck at 15 meters (50 feet), at 80 km/hr. (50 mph)	80	Food Blender at 1 meter (3 feet) Garbage Disposal at 1 meter (3 feet)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 meters (100 feet)	70	Vacuum Cleaner at 3 meters (10 feet)
Commercial Area Heavy Traffic at 90 meters (300 feet)	60	Normal Speech at 1 meter (3 feet)
Quiet Urban Daytime	50	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
N/A	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Saxelby Acoustics, LLC, 2024.

Stationary sources of noise, including construction equipment, attenuate at a rate of approximately 6.0 dB per doubling of distance from the source depending on ground absorption. Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, increase the efficacy of noise attenuation that occurs by distance alone. Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

Surrounding Land Uses and Existing Sensitive Receptors

Surrounding existing uses include the Grasshopper Slough, single-family residences, multi-family residences, and commercial uses to the north; Union Pacific Railroad (UPRR) tracks and agricultural land to the east, across State Route (SR) 65; Bear River, the City of Wheatland Wastewater Treatment Plant (WWTP), and agricultural land to the south; and agricultural land, undeveloped land, and Bishop's Pumpkin Farm to the west.

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species, although most jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise. Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, the nearest sensitive receptors would be the single-family residences located to the north and west of the project site (refer to Figure 3-2 of the Project Description chapter of this EIR), with the closest residential units located west of 6th Street, approximately 200 feet from where project construction would occur.

Existing Ambient Noise Environment

The existing ambient noise environment in the project vicinity is primarily defined by traffic on SR 65 and the UPRR directly to the east of the project site. To quantify the existing ambient noise environment in the project vicinity, continuous (24-hour) noise level measurements were conducted at two locations near the project site, and short-term noise measurements were conducted at two locations near the project site, as shown in Figure 4.2-1. The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted as L_{max}, represents the highest noise level measured. The average value, denoted as L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted as L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period. A summary of the noise level measurement survey results is provided in Table 4.2-2. As shown in Table 4.2-2, the average measured on-site noise levels were 72 dB L_{dn} at LT-1, 65 dB L_{dn} at LT-2, 37 dB L_{eq} at ST-1, and 60 dB L_{eq} at ST-2.

The existing traffic noise levels at the nearest sensitive receptors along each roadway segment in the project area were also evaluated using the Federal Highway Administration (FHWA) Traffic Noise Model (FHWA-RD-77-108). Existing noise contours, expressed in L_{dn}, for major roadways within the project vicinity were developed, the results of which are presented in Table 4.2-3. The approach used to evaluate existing traffic noise levels is further discussed in the Method of Analysis section of this chapter. Traffic data the for existing conditions was obtained from the project traffic consultant, TJKM.

Fundamentals of Vibration

Vibration is similar to noise in that both involve a source, a transmission path, and a receiver. However, while noise is generally considered to be pressure waves transmitted through air, vibration is usually associated with transmission through the ground or structures. As with noise, vibration consists of an amplitude and frequency. A person's response to vibration depends on their individual sensitivity, as well as the amplitude and frequency of the source.

Figure 4.2-1
Noise Measurement Locations

Source: Saxelby Acoustics, LLC., 2024.

Table 4.2-2
Summary of Existing Background Noise Measurement Data

Location	Date	L_{dn}	Day L_{eq}	Day L_{50}	Day L_{max}	Night L_{eq}	Night L_{50}	Night L_{max}
LT-1: 100 feet from center of SR 65	9/28/2023	72	67	65	86	66	59	86
LT-2: 170 feet from center of SR 65	9/28/2023	65	60	58	77	59	54	77
ST-1: 1,670 from center of SR 65	9/27/2023	N/A	37	36	53	N/A	N/A	N/A
ST-2: 70 feet from WWTP	9/27/2023	N/A	60	60	61	N/A	N/A	N/A

Notes:
- All values are shown in dBA.
- Daytime hours: 7:00 AM to 10:00 PM.
- Nighttime hours: 10:00 PM to 7:00 AM.

Source: Saxelby Acoustics, LLC., 2024.

Table 4.2-3
Existing Traffic Noise Levels

Roadway	Segment	Existing Exterior Noise Level (dBA L_{dn}) at Closest Sensitive Receptors
SR 65	North of Levee Road	57.0
SR 65	South of State Street	58.4
SR 65	South of Main Street	65.8
SR 65	North of 1st Street	66.7
Main Street	Malone Avenue to SR 65	48.7
Main Street	SR 65 to State Street	52.7

Source: Saxelby Acoustics, LLC., 2024.

Vibration can be described in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of velocity in inches per second (in/sec) peak particle velocity (PPV) or root-mean-square (VdB, RMS). Standards pertaining to perception, as well as damage to structures, have been developed for vibration in terms of PPV and RMS velocities. As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate. Differences in subsurface geologic conditions and distance from the source of vibration result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes decrease with increasing distance.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases. Operation of construction equipment and construction techniques generate ground vibration. Roadway traffic can also be a source of such vibration. At high enough amplitudes, ground vibration has the potential to damage structures and/or cause cosmetic damage. However, traffic rarely generates vibration amplitudes high enough to cause structural or cosmetic damage.

Construction has the potential to result in varying degrees of temporary ground vibration depending on the specific construction equipment used and operations involved. Table 4.2-4 indicates that pursuant to Caltrans standards, the threshold for architectural damage to structures is 0.2 peak particle velocity in inches per second (in/sec PPV) and continuous vibrations of 0.1 in/sec PPV, or greater, would likely cause annoyance to sensitive receptors.

Table 4.2-4
Effects of Vibration on People and Buildings

PPV			
mm/sec	**in/sec**	**Human Reaction**	**Effect on Buildings**
0.15 - 0.30	0.006 - 0.019	Threshold of perception; possibility of intrusion.	Vibrations unlikely to cause damage of any type.
2.0	0.08	Vibrations readily perceptible.	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected.
2.5	0.10	Level at which continuous vibrations begin to annoy people.	Virtually no risk of “architectural” damage to normal buildings.
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations).	Threshold at which there is a risk of “architectural” damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize “architectural” damage.
10 - 15	0.4 - 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges.	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage.

Source: California Department of Transportation, 2002.

4.2.3 REGULATORY CONTEXT

In order to limit exposure to physically and/or psychologically damaging noise levels, the State of California, various county governments, and most municipalities in the State have established standards and ordinances to control noise. Applicable federal laws or regulations pertaining to noise or vibration that would directly apply to the proposed project do not exist. The following provides a general overview of the existing State and local regulations that are relevant to the proposed project.

State Regulations

The following are the State environmental laws and policies relevant to noise and vibration.

California Building Code

The California Building Code (Title 24, Part 2 of the California Code of Regulations [CCR]) establishes uniform minimum noise insulation performance standards to protect persons within new buildings that house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings.

Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Title 24 also requires that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Local Regulations

Relevant goals and policies from the City's General Plan, and various other local guidelines and regulations related to noise are discussed in further detail below.

City of Wheatland General Plan

The relevant goals and policies from the City's General Plan related to noise and vibration are presented below.

Goal 9.G To protect Wheatland residents from the harmful and annoying effects of exposure to excessive noise.

Policy 9.G.1 The City shall prohibit development of new noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9-1 (see Table 4.2-5) as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated in the development design to achieve the standards set out in Table 9-1 (see Table 4.2-5).

Table 4.2-5
Noise Level Performance Standards
New Projects Affected by or Including Non-Transportation Sources*

Noise Level Descriptor	Daytime	Nighttime
Hourly, Leq, dB	50	45
Maximum Level, dB	70	65

Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

*For the purposes of compliance with the provisions of this section, the City defines transportation noise sources as traffic on public roadways, railroad line operations, and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, and loading docks.

Policy 9.G.2 The City shall require that noise created by new non-transportation sources be mitigated so as not to exceed the noise level standards of Table 9-1 (see Table 4.2-5) as measured immediately within the property line of lands designated for noise-sensitive uses.

Policy 9.G.4 The City shall prohibit new development of noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels set out in Table 9-2 (see Table 4.2-6), unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels set out in Table 9-2 (see Table 4.2-6).

Policy 9.G.5 The noise created by new transportation noise sources shall be mitigated so as not to exceed the levels specified in Table 9-2 (see Table 4.2-6) at outdoor activity areas or interior spaces of existing noise sensitive land uses.

Table 4.2-6
Maximum Allowable Noise Exposure Transportation Noise Sources

Land Uses	Outdoor Activity Areas[1] L_{eq}/CNEL dB	Interior Spaces	
		L_{eq}/CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	-	35
Churches, Meeting Halls	60[3]	-	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

[1] Where the location of outoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise sources, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building façade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Policy 9.G.6 New roadway improvement projects will be needed to accommodate development permitted according to the Land Use Diagram. Where existing noise-sensitive uses may be exposed to increased noise levels due to increased roadway capacity and increases in travel speeds associated with roadway improvements, the City will apply the following criteria to determine the significance of increases in noise related to roadway improvement projects:

a. Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant; and

b. Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant; and

c. Where existing traffic noise levels are greater than 65 dB Ldn at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant.

Policy 9.G.7 An increase of 3 dB L_{dn} or greater due to additional traffic volumes is considered a potentially significant impact.

Goal 9.H To protect the economic base of the city by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.

Policy 9.H.1 Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels set out in Table 9-2 (see Table 4.2-6) or the performance standards of Table 9-1 (see Table 4.2-5), an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

Policy 9.H.2 Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-2 (see Table 4.2-5 and Table 4.2-6), the emphasis in such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered as a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

City of Wheatland Municipal Code

Section 8.04.030, Prohibited noises, of the City of Wheatland Municipal Code establishes a list of acts, among others, that are declared to be loud, disturbing and unnecessary noises in violation of Chapter 8.04, Noise Control. Section 8.04.030(H) establishes hours in which noise related to construction activities is allowed within the City. The specific text of Section 8.04.030(H) is provided below:

> H. Construction or Repairing of Buildings. The erection (including excavation), demolition, alteration or repair of any building other than between the hours of seven a.m. and ten p.m. on weekdays, except in case of urgent necessity in the interest of the public health and safety, and then only with a permit from the building inspector, which permit may be granted for a period not to exceed three days or less while the emergency continues and which permit may be renewed for periods of three days or less while the

> emergency continues. If the building inspector should determine that the public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or the excavation of streets and highways within the hours of ten p.m. and seven a.m. and if he or she shall further determine that loss or inconvenience would result to any party in interest, he or she may grant permission for such work to be done within the hours of ten p.m. and seven a.m., upon application being made at the time the permit for the work is awarded or during the progress of the work.

4.2.4 IMPACTS AND MITIGATION MEASURES

The following section describes the standards of significance and methodology used to analyze and determine the proposed project's potential impacts related to noise and vibration. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, for the purposes of this EIR, an impact related to noise is considered significant if the proposed project would:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Summary of Applicable Noise Standards

Applicable noise level standards from the City's General Plan and the City of Wheatland Municipal Code are summarized below.

Construction Noise Criteria

The City of Wheatland does not have a specific threshold for evaluating noise increases due to short-term construction projects. Pursuant to Section 8.04.030(H) of the City of Wheatland Municipal Code, noise from the construction (including excavation), demolition, alteration or repair of any building is prohibited other than between the hours of 7:00 AM and 10:00 PM on weekdays, except in case of urgent necessity in the interest of the public health and safety.

Nonetheless, for the purposes of the analysis included herein, an increase criteria of 12 dBA is used for evaluating construction-related noise increases at the existing residential receptors in the project vicinity. The level of increase is approximately equivalent to a doubling of sound energy and has been the standard of significance for California Department of Transportation (Caltrans) projects at the State level for many years.[4] Application of the standard to construction activities is considered reasonable considering the temporary nature of construction activities.

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[4] California Department of Transportation. *Traffic Noise Analysis Protocol*. April 2020.

Transportation Source Noise Criteria

The City of Wheatland General Plan applies 60 dB L_{eq}/CNEL exterior and 45 dB L_{eq}/CNEL interior noise level standards for residential uses affected by transportation noise sources.

Non-Transportation Source Noise Criteria

The City of Wheatland General Plan establishes maximum noise level standards for non-transportation sources of 50 dBA L_{eq} and 70 dBA L_{max} during daytime hours, and 45 dBA L_{eq} and 65 dBA L_{max} during nighttime hours, with noise levels measured immediately within the property line of lands designated for noise sensitive uses.

Substantial Increase Criteria

Generally, a project may have a significant effect on the environment if it substantially increases the ambient noise levels for adjoining areas or exposes people to measurably severe noise levels. In practice, a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in transportation noise associated with the proposed project is a factor in determining significance.

Pursuant to General Plan Policy 9.G.7, an increase of 3.0 dB L_{dn} or greater due to additional traffic volumes would constitute a significant impact.

Vibration

The City of Wheatland does not have specific policies or standards pertaining to vibration levels. However, vibration levels associated with construction activities and project operations are addressed as potential vibration impacts associated with project implementation. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events.

Based on the effects of vibration on humans and buildings as shown above in Table 4.2-4, a significant impact would occur if construction or operation of the proposed project would expose sensitive receptors to groundborne vibration levels in excess of the Caltrans vibration impact criteria of 0.2 in/sec PPV for damage to structures and 0.1 in/sec PPV for annoyance potential.

Method of Analysis

An Environmental Noise Assessment was prepared for the proposed project by Saxelby Acoustics (see Appendix D). As part of the Environmental Noise Assessment, potential future construction noise associated with the proposed project was analyzed using data compiled for various pieces of construction equipment at a distance of 50 feet to assess noise impacts due to temporary noise. Similarly, construction vibration was analyzed using data compiled for various pieces of equipment at a distance of 25, 50, and 100 feet.

To quantify the existing ambient noise environment in the project vicinity, continuous (24-hour) noise level measurements were conducted at two locations near the project site, and short-term noise level measurements were conducted at two locations near the project site, as shown in Figure 4.2-1. Noise measurements were taken on September 27 and 28, 2023. The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. Larson Davis Laboratories (LDL) model 820 and 831 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

The FHWA RD-77-108 Traffic Noise Prediction Model was used to predict existing noise levels due to traffic. The model is based upon the Calveno reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was used in conjunction with project-specific trip generation volumes provided in the Traffic Impact Study (TIS) prepared for the proposed project by TJKM (see Appendix E of this EIR),[5] as well as truck usage and vehicle speeds on the local area roadways from field observations, to analyze the potential impact of project-generated traffic noise level increases on the local roadway network under Existing Plus Project and Cumulative Plus Project conditions.

Traffic noise levels were predicted at sensitive receptors at the closest typical setback distance along each project-area roadway segment. It should be noted, however, that in some locations, sensitive receptors may not receive full shielding from noise barriers or may be located at distances which vary from the assumed calculation distance.

Further calculations are provided in Appendix D of this EIR. The results of the noise and vibration impact analyses were compared to the standards of significance discussed above in order to determine the associated level of impact.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed project in comparison with the baseline and standards of significance identified above.

4.2-1 Generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Based on the analysis below and with the implementation of mitigation, the impact is *less than significant*.

During construction of the proposed project, heavy equipment could be used for grading, excavation, paving, and structure construction, all of which would temporarily increase ambient noise levels when in use. Noise levels would vary depending on the type and operation of equipment and how well the equipment is maintained. Noise exposure at any single point outside the project site would also vary depending on the distance from the source. As shown below in Table 4.2-7, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. However, the majority of construction activities would occur at a distance greater than 50 feet from the nearest existing sensitive receptors. Associated noise level at such distances would not be perceptible. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy

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[5] TJKM. *Traffic Impact Study Heritage Oaks Estate East.* November 16, 2023.

materials and equipment to and from the construction site. The noise increase would be of short duration and would likely occur primarily during daytime hours.

As shown in Table 4.2-7, construction equipment is predicted to generate noise levels of up to 90 dBA L_{max} at 50 feet. However, construction noise is evaluated as occurring at the center of the site to represent average noise levels generated over the duration of construction across the project site. The nearest noise-sensitive receptors are located approximately 760 feet from the center of proposed Village 1. At 760 feet, construction noise would be approximately 66 dBA L_{max}. Based upon the noise monitoring conducted at site LT-2, existing maximum noise levels were found to be 77 dBA L_{max}. Therefore, typical construction noise levels associated with the proposed project are not expected to exceed ambient noise levels.

Table 4.2-7
Construction Equipment Noise

Type of Equipment	Maximum Noise Level at 50 Feet (dBA)
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Federal Highway Administration. Roadway Construction Noise Model User's Guide. January 2006.

In addition, construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. Section 8.04.030(H) of the City of Wheatland Municipal Code establishes acceptable hours of construction as 7:00 AM to 10:00 PM on weekdays. Therefore, the proposed project would not generate a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Thus, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.2-2 Generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or

applicable standards of other agencies. Based on the analysis below, the impact is *less than significant.*

Residential land uses do not typically generate substantial noise during operations. Therefore, the primary noise source associated with the proposed project would be noise associated with increased traffic volumes on the local roadway network. An evaluation of future traffic noise levels at existing sensitive receptors in the project vicinity is included below.

Using the methodology described above in the Method of Analysis section, traffic noise levels under existing and Existing Plus Project conditions were estimated as part of the Environmental Noise Assessment and are shown in Table 4.2-8. The estimated noise levels are provided in terms of dBA L_{dn} at the nearest existing sensitive receptor.

Table 4.2-8
Predicted Existing and Existing Plus Project Traffic Noise Level Increases

Roadway	Segment	Predicted Exterior Noise Level at Closest Sensitive Receptors (dBA L_{dn})			
		Existing	Existing Plus Project	Change	Threshold of Significance
SR 65	North of Levee Road	57.0	57.2	0.2	+3.0 dB
SR 65	South of State Street	58.4	58.7	0.3	+3.0 dB
SR 65	South of Main Street	65.8	66.4	0.6	+3.0 dB
SR 65	North of 1st Street	66.7	66.9	0.2	+3.0 dB
Main Street	Malone Avenue to SR 65	48.7	49.9	1.2	+3.0 dB
Main Street	SR 65 to State Street	52.7	53.6	0.9	+3.0 dB

Source: Saxelby Acoustics, LLC., 2024.

As shown above in Table 4.2-8, the 60 dB L_{eq}/CNEL exterior noise level standard for transportation sources would be exceeded under existing conditions at the nearest sensitive receptors along SR 65 south of Main Street and north of 1st Street. However, the proposed project would not cause new noise level increases in excess of the 60 dB L_{eq}/CNEL exterior noise level standard at sensitive receptors. Additionally, the increase in traffic noise levels attributable to the proposed project under Existing Plus Project conditions would be below the City's 3.0 dB threshold. For example, under Existing Plus Project conditions, the maximum increase in traffic noise at the nearest sensitive receptor is predicted to be 1.2 dBA on Main Street, from Malone Avenue to SR 65, which is less than the 3.0 dBA threshold of significance for the roadway segment. Therefore, the increase in existing traffic noise levels at existing sensitive receptors resulting from the proposed project would be considered less than significant.

Based on the above, the proposed project would not result in the generation of a substantial permanent increase in ambient noise levels at existing sensitive receptors located along local roadways or in the vicinity of the project site. Therefore, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.2-3 Generation of excessive groundborne vibration or groundborne noise levels. Based on the analysis below, the impact is *less than significant*.

The proposed project would consist of a residential community. Such uses do not typically involve equipment that generates appreciable vibration. Overall, operations associated with the proposed project would not result in the generation of excessive groundborne vibration or groundborne noise levels. However, construction activities associated with the proposed project would have the potential to result in varying degrees of temporary ground vibration depending on the specific construction equipment used and operations.

Construction would use typical construction equipment and would not require significant sources of vibration such as pile driving or blasting. Table 4.2-9 below shows the typical vibration levels produced by construction equipment and indicates that construction vibration levels anticipated for typical construction are less than the 0.2 in/sec PPV threshold at distances of 26 feet.

Table 4.2-9
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)	PPV at 100 feet (in/sec)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/Drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/Roller	0.210 (less than 0.2 at 26 feet)	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.

Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hour, pursuant to Section 8.04.030(H) of the City of Wheatland Municipal Code.

Based on the above, the proposed project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.2-4 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels. Based on the analysis below, the impact is *less than significant*.

As detailed in Map 1 and Map 5 of the Beale Air Force Base Land Use Compatibility Plan (BAFBLUCP), the project site is located within Review Area 2, which encompasses the airspace protection surfaces and Recorded Overflight Notification Area, as well as the Airport Influence Area.[6] According to Table 1 in the BAFBLUCP, exterior noise exposure over CNEL 60 dB for single-family residential uses is considered incompatible. However, according to Map 2, the project site is not located within any noise impact zones. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airports.

Based on the above, the proposed project would not expose people residing or working in the project area to excessive noise levels, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, "cumulative impacts" refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. For further detail related to the cumulative setting of the proposed project, refer to Chapter 5, Statutorily Required Sections, of this EIR.

4.2-5 Generation of a substantial permanent increase in ambient noise levels associated with the proposed project in combination with cumulative development. Based on the analysis below, the impact is *less than significant*.

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[6] Sacramento Area Council of Governments. *Beale Air Force Base Land Use Compatibility Plan*. Available at: https://www.sacog.org/post/yuba-county. Accessed June 2024.

Future development projects within the City of Wheatland would incrementally affect the future cumulative ambient noise environment. Given the residential nature of the proposed project, the primary project component that could combine with noise impacts from surrounding development in the project region would be associated with vehicle traffic generated by the proposed project and other planned development projects, which together, could potentially result in a significant cumulative impact related to transportation noise.

Predicted noise levels calculated for the cumulative and Cumulative Plus Project conditions at the nearest sensitive receptors using the methodology described in the Method of Analysis section are presented below in Table 4.2-10. As shown therein, the 60 dB L_{eq}/CNEL exterior noise level standard for transportation sources would be exceeded under cumulative conditions at the nearest sensitive receptors along SR 65 south of Main Street and north of 1st Street. Therefore, the proposed project's incremental contribution to the cumulative impact is based on whether the proposed project would result in any new exceedances, and if the increases are substantial.

Table 4.2-10 also includes the applicable City noise level increase significance criteria. As shown in the table, the proposed project's incremental increase in traffic noise levels under Cumulative Plus Project conditions would be below the FICON increase significance criteria at each roadway segment. Additionally, the proposed project would not result in new exceedances of the 60 dB L_{eq}/CNEL exterior noise level standard for transportation sources.

Table 4.2-10
Predicted Cumulative and Cumulative Plus Project Traffic Noise Level Increases

		Predicted Exterior Noise Level at Closest Sensitive Receptors (dBA L_{dn})			
Roadway	**Segment**	**Cumulative**	**Cumulative Plus Project**	**Change**	**Threshold of Significance**
SR 65	North of Levee Road	57.0	57.2	0.2	+3.0 dB
SR 65	South of State Street	58.4	58.6	0.2	+3.0 dB
SR 65	South of Main Street	65.8	66.0	0.2	+3.0 dB
SR 65	North of 1st Street	66.7	66.9	0.2	+3.0 dB
Main Street	Malone Avenue to SR 65	48.7	48.9	0.2	+3.0 dB
Main Street	SR 65 to State Street	52.7	52.9	0.2	+3.0 dB

Source: Saxelby Acoustics, LLC., 2024.

Based on the above, under Cumulative Plus Project conditions, the proposed project would not result in a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.3 Transportation

4.3 TRANSPORTATION

4.3.1 INTRODUCTION

The Transportation chapter of the EIR discusses the existing transportation and circulation facilities within the project vicinity, as well as applicable policies and guidelines used to evaluate operation of such facilities. Where development of the proposed project would conflict with applicable policies or guidelines, mitigation measures are identified. The information contained within this chapter is primarily based on the Traffic Impact Study (TIS) (see Appendix E of this EIR)[1] prepared for the proposed project by TJKM, as well as the City of Wheatland General Plan Policy Document,[2] General Plan Background Report,[3] and associated EIR.[4]

As discussed further below, the current California Environmental Quality Act (CEQA) Guidelines require lead agencies such as the City of Wheatland to use vehicle miles traveled (VMT), rather than Level of Service (LOS), as the primary metric for assessing transportation impacts under CEQA (CEQA Guidelines Section 15064.3). However, both a VMT analysis and LOS analysis were included as part of the TIS prepared for the proposed project. Pursuant to CEQA Guidelines Section 15064.3, impact significance in this chapter is based upon VMT, whereas the results of the LOS analysis presented in the TIS will be used by the City to address consistency with the City of Wheatland General Plan goals and policies related to transportation, including adopted LOS policies.

4.3.2 EXISTING ENVIRONMENTAL SETTING

The section below describes the physical and operational characteristics of the existing transportation system within the study area, including the surrounding roadway network, transit, bicycle, and pedestrian facilities.

Existing Roadways

The existing roadways within the project vicinity are summarized below.

State Route 65

State Route (SR) 65 is a two-lane northwest-southeast arterial that connects the City of Wheatland with surrounding agricultural areas, as well as with nearby cities and communities such as Sheridan, Lincoln, and Yuba City. SR 65 additionally provides access to other major roadways, such as Interstate 80 (I-80) and SR 99. According to the City of Wheatland General Plan, SR 65 transitions into an “amenity corridor” within the downtown area and includes roadway improvements to complement its status as a highly trafficked roadway that bisects the City. The roadway generally parallels the Union Pacific Railroad (UPRR) right-of-way (ROW) and is the most direct route to travel from the north side of the City to the south side of the City. Within the City limits, SR 65 includes a two-way left-turn lane as a median, concrete sidewalks and Class II bike lanes on both sides, marked crosswalks and dedicated turn lanes at most signalized

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[1] TJKM. *Traffic Impact Study Heritage Oaks Estate East.* June 14, 2024.

[2] City of Wheatland. *General Plan Policy Document*. Adopted July 2006.

[3] City of Wheatland. *City of Wheatland General Plan Background Report*. Adopted July 2006.

[4] City of Wheatland. *City of Wheatland General Final Environmental Impact Report*. May 2006.

intersections, and signal control and side street stop control with other arterials and local roadways, respectively. The posted speed limit is 35 miles per hour (mph) within the City limits of Wheatland and 55 mph outside the City limits.

1st Street/Wheatland Road, 2nd Street, 3rd Street, and 4th Street

1st, 2nd, 3rd, and 4th Streets are two-lane northeast-southwest running local roadways that form a gridded street network, along with the two-lane northwest-southeast running A, B, C, D, and E Streets. The aforementioned roadways form the historic downtown core of the City of Wheatland. The roadways serve neighborhood residential land uses as well as commercial land uses that cluster near the UPRR ROW and SR 65/D Street. Within the downtown area, the roadways are intermittently lined with concrete sidewalks and have on-street parking present on both sides. The northeast-southwest running roadways have double-yellow lines that serve as medians in most locations, while the northwest-southeast running roadways do not include medians. The City of Wheatland General Plan designates 4th Street from SR 65/D Street to Spenceville Road, B Street from Olive Street to the southern City limits, and C Street from Olive Street to 6th Street as arterial “amenity corridors.” The remaining aforementioned roadways are designated as local streets. At-grade highway-railroad crossings exist on 2nd, 3rd, and 4th Streets between SR 65 (D Street) and C Street. The posted speed limits are 25 mph.

Malone Avenue

Malone Avenue is a two-lane northwest-southeast running local roadway. Malone Avenue runs through the northern portion of the project site, and continues south as the project site’s western boundary. The roadway is paved from Main Street to the southern City limits, approximately 440 feet south of Main Street. The roadway serves residential land uses within the City limits. Beyond the City limits, Malone Avenue continues south unpaved in unincorporated area through open space and agricultural land uses until it reaches the City of Wheatland Wastewater Treatment Plant (WWTP) approximately 760 feet north of Bear River. The roadway does not include bicycle or pedestrian facilities, a posted speed limit, or on-street parking.

Main Street

Main Street is a two-lane northeast-southwest arterial that connects various residential neighborhoods and commercial storefronts within the City. Main Street is designated as an “amenity corridor” by the City of Wheatland General Plan and extends from Roddan Lane in the south to Spenceville Road in the north. A dashed yellow line serves as the median for the roadway south of SR 65, while north of SR 65 a double yellow line serves as the median for the roadway. On-street parking is present on both sides. Concrete sidewalks are present on both sides intermittently. An at-grade highway-railroad crossing exists on the roadway between SR 65 and C Street. The posted speed limit is 25 mph.

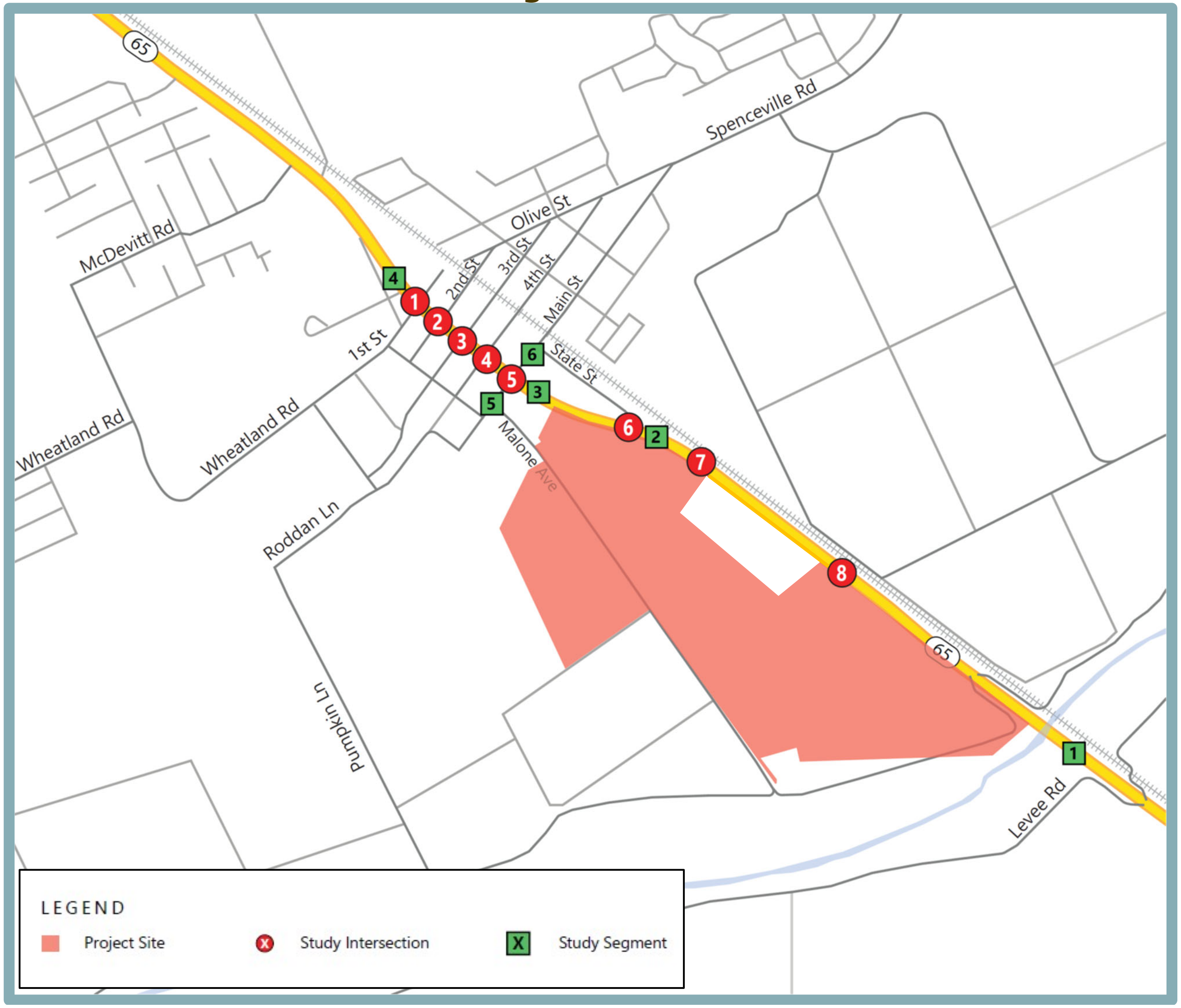
State Street

State Street is a two-lane northwest-southeast running local roadway that parallels the UPRR ROW from Main Street to SR 65. The roadway provides rural residential land uses with access to the rest of the City. The roadway does not have a median or bicycle or pedestrian facilities. On-street parking is not present. The posted speed limit is 25 mph.

Nearby Intersections

The following intersections are located in the project vicinity (see Figure 4.3-1):

Figure 4.3-1
Existing Intersections



Source: TJKM, Traffic Impact Study, June 2024.

1. SR 65 and 1st Street (Signalized)
2. SR 65 and 2nd Street (Two-way Stop Control)
3. SR 65 and 3rd Street (Two-way Stop Control)
4. SR 65 and 4th Street (Two-way Stop Control)
5. SR 65 and Main Street (Signalized)
6. SR 65 and State Street (One-way Stop Control)
7. SR 65 and Red Oak Drive (Proposed)
8. SR 65 and DeValentine Parkway (Proposed)

As previously discussed, operations of the aforementioned intersections are evaluated in the project-specific LOS analysis presented in the TIS and will otherwise be used by the City in the project review process to address consistency with City of Wheatland General Plan goals and policies related to LOS. It should be noted that Intersections #7 and #8, as shown in Figure 4.3-1, are proposed project entries and are not existing intersections.

Existing Pedestrian Facilities

Pedestrian facilities consist of marked crosswalks, concrete sidewalks, pedestrian signals, and off-street paths that provide safe and convenient routes for pedestrians to access the destinations such as institutions, businesses, public transportation, and recreational facilities.

In the vicinity of the project site, marked crosswalks and concrete curb cuts with tactile surfaces are respectively present at most approaches and corners of the study intersections, except at the intersection of SR 65 at State Street, which does not include pedestrian facilities. Countdown pedestrian signal heads are present at the corners of the signalized intersections of SR 65 at 1st Street, and at SR 65 at Main Street.

Concrete sidewalks are consistently present along SR 65 on both sides from Main Street to 1st Street and intermittently present along remaining roadways on both sides in the downtown area of the City. South of Main Street, concrete sidewalks are not present along SR 65.

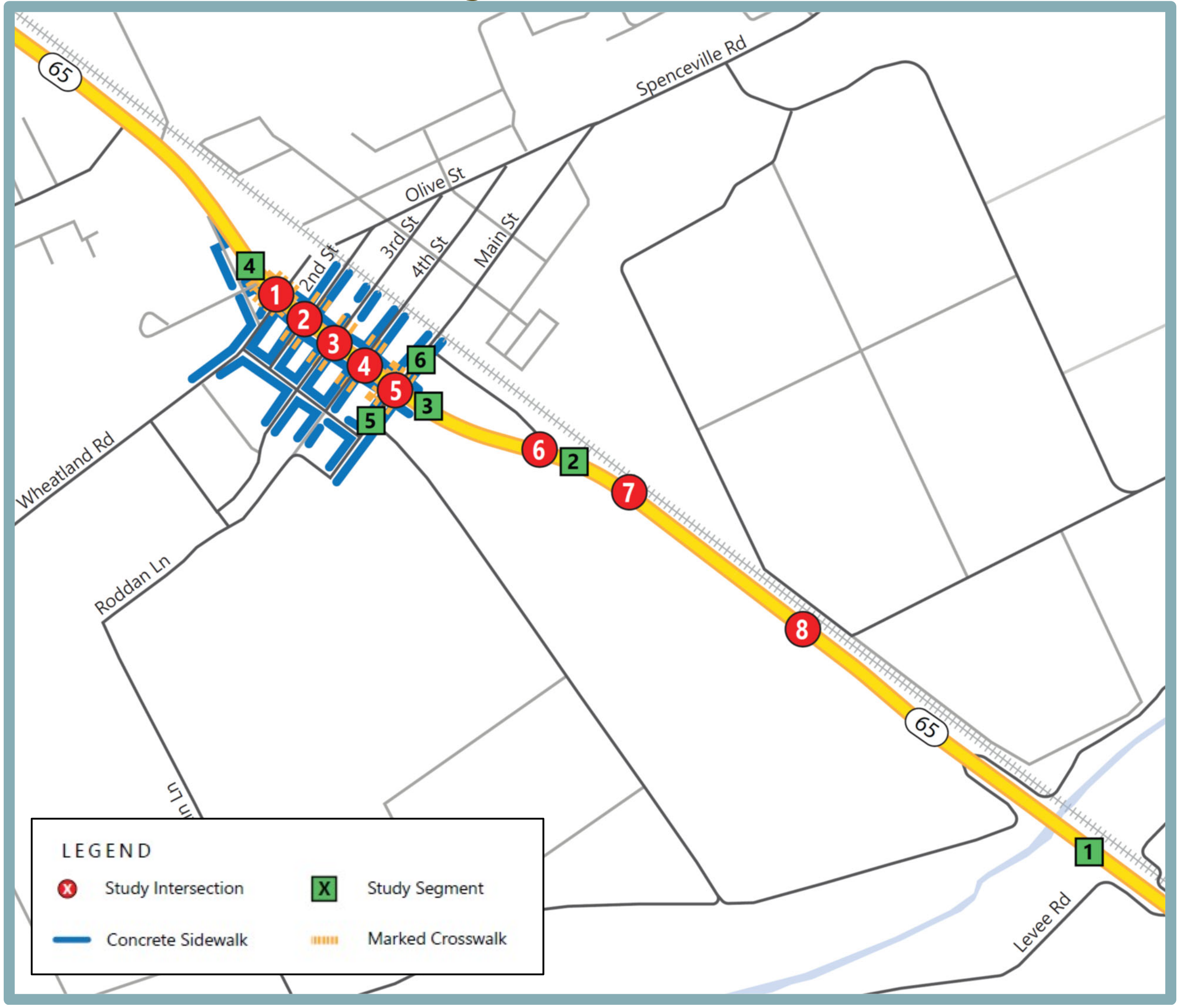
Beyond the study intersections, marked crosswalks are occasionally present at intersection approaches and concrete sidewalks are intermittently present along roadways near the vicinity of the project site (see Figure 4.3-2).

Existing Bicycle Facilities

Bicycle paths, lanes, and routes are typical examples of bicycle transportation facilities, which are defined by the California Department of Transportation (Caltrans) as being in one of the following four classes:

- Class I Bikeway (Multiuse Trail): A completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
- Class II Bikeway (Bike Lane): A designated lane for the exclusive use or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited but with vehicle parking and cross-flows by pedestrians and motorists permitted.
- Class III Bikeway (Bike Route): A route designated by signs or pavement markings and shared with pedestrians and motorists.

Figure 4.3-2
Existing Pedestrian Facilities



Source: TJKM, Traffic Impact Study, June 2024.

- Class IV Bikeway (Separated Bikeway): An on-street facility reserved for use by bicyclists with physical separation between the bikeway and travel lanes. Physical separation consists or vertical elements that may include curbs, landscaping, bollards, or parking lanes.

In the vicinity of the project site, Class II bike lanes exist on both sides of SR 65 from approximately 160 feet south of Main Street to the northern City limits at the intersection of SR 65 at Hooper Street (see Figure 4.3-3).

In October 2014, the City adopted the Wheatland Bikeway Master Plan in order to establish a comprehensive bikeway system and design new development to foster walking and bicycling within the City. The City of Wheatland 2014 Bikeway Master Plan proposes Class II bike lanes along the entire length of SR 65 in the City's vicinity. Class II bike lanes are also proposed along Main Street, and E Street. Class II bike lanes and a "super sidewalk" (a raised path for pedestrians and bicycles separated from vehicular lanes by landscaping) are proposed for 1st Street west of SR 65. A Class I multi-use path is proposed along an abandoned segment of Malone Avenue from Main Street to Bear River.

Existing Transit Facilities

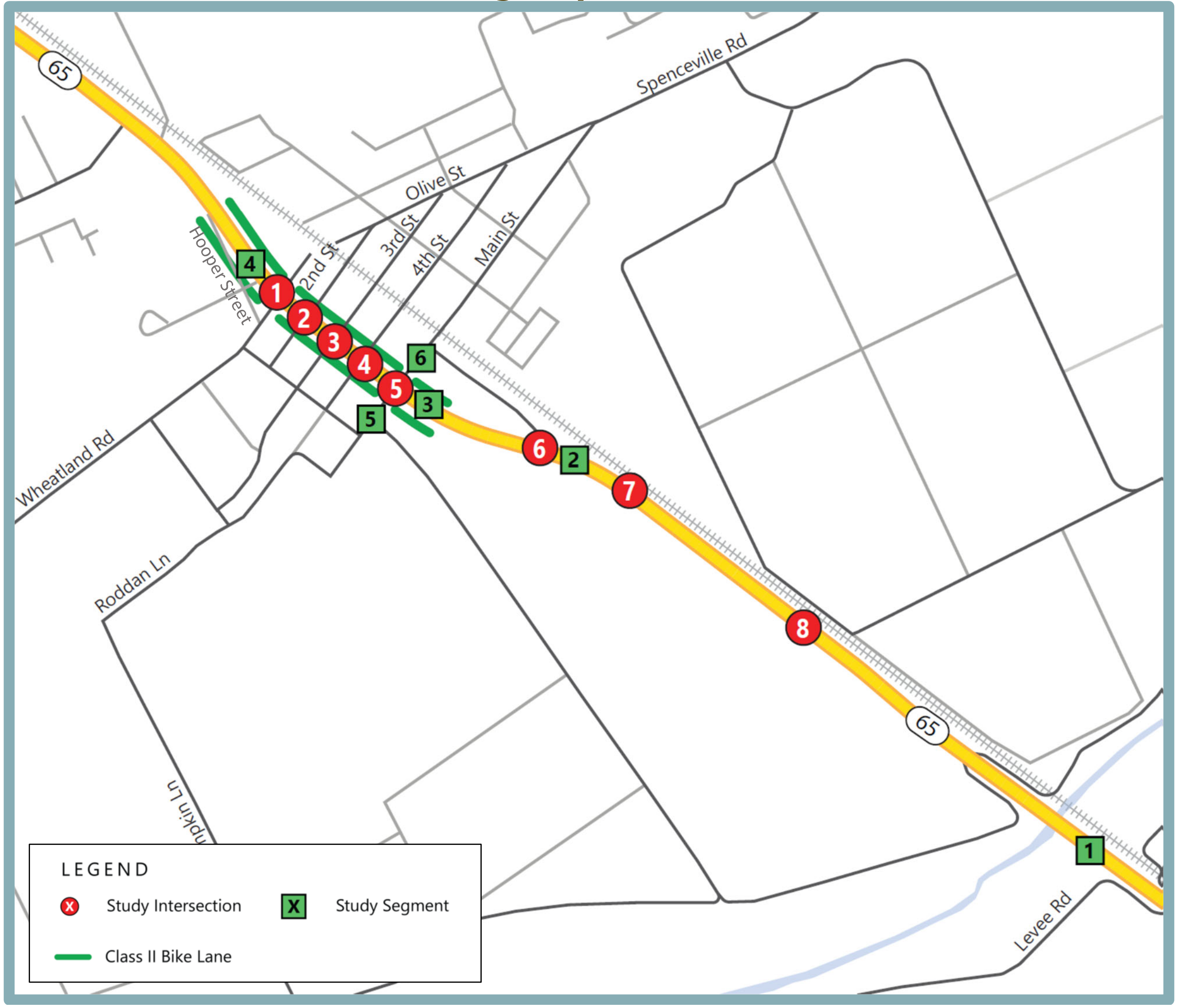
Yuba-Sutter Transit is a public agency that operates fixed-route and demand response (Dial-a-Ride) bus services throughout Yuba County and Sutter County. Yuba-Sutter Transit offers regular fixed route service to the communities of Yuba City, Marysville, Olivehurst, and Linda. Limited route deviation service is provided to the Yuba County foothills and to the cities of Live Oak and Wheatland.

Bus services are divided into local routes and rural routes. Six routes are provided locally within the Marysville/Yuba City area and operate from 6:30 AM to 6:30 PM on weekdays, and from 8:30 AM to 5:30 PM on Saturdays. Service is not available on Sundays. Rural routes consist of three routes that provide a combination of advance reservation (demand response) and scheduled services. The Wheatland Route is one of the three rural routes and connects various bus stops within the City of Wheatland with Yuba City. The Wheatland Route offers two roundtrips into Marysville and Linda on Tuesdays and Thursdays under a reimbursable contract to the City. Transfers to routes serving Sacramento and Yuba City are available. Service is provided on weekdays from 10:00 AM to 4:35 PM, and the Route travels from the Yuba County Government Center to Donner Trail Manor, located at 121 C Street. The Wheatland Route provides one inbound bus from the City of Wheatland to Yuba City in the morning, and one outbound bus from Yuba City to the City of Wheatland in the evening per day.

Currently the following five designated stops exist on the Wheatland Route:

- Spruce Avenue/Evergreen Drive;
- SR 65/3rd Street;
- Main Street/C Street;
- Anderson Way/McCurry Street; and
- Donner Trail Manor (121 C Street).

Figure 4.3-3
Existing Bicycle Facilities



Source: TJKM, Traffic Impact Study, June 2024.

Yuba-Sutter Transit provides complementary Americans with Disabilities Act (ADA) compliant paratransit service (Dial-A-Ride) during the same days and hours as the fixed-route services. The service is also available to seniors (age 65+) and eligible persons with disabilities.

Vehicle Miles Traveled

Pursuant to CEQA Guidelines Section 15064.3, VMT is the primary metric used to identify transportation impacts under CEQA. VMT is a metric that accounts for the number of vehicle trips generated and the length or distance of those trips. VMT does not directly measure traffic operations; instead, VMT is a measure of transportation network use and efficiency, especially when expressed as a function of population (i.e., VMT per capita). For residential projects, such as the proposed project, the City of Wheatland considers household or home-based VMT per capita, which is the sum of trip lengths originating from home, divided by the number of residents. VMT tends to increase as land use density decreases and travel becomes more reliant on the use of single-passenger vehicles.

As a result of Senate Bill (SB) 743, passed in 2013, local jurisdictions may not rely on vehicle LOS and similar measures related to delay as the basis for determining the significance of transportation impacts under CEQA. Thus, consistent with the CEQA Guidelines, VMT is the primary metric used to identify transportation impacts to roadway systems within this chapter. The City of Wheatland has not yet formally adopted VMT standards in response to SB 743. Thus, guidance from the Governor's Office and Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA is used.[5] According to TJKM, and based on the Sacramento Council of Governments (SACOG) Activity Based Travel Demand Model, the existing total residential VMT in the City of Wheatland is 138,567, and 32.30 VMT per capita.

4.3.3 REGULATORY CONTEXT

Existing transportation policies, laws, and regulations that would apply to the proposed project are summarized below and provide a context for the impact discussion related to the project's consistency with the applicable regulatory conditions. Federal plans, policies, regulations, or laws related to transportation and circulation are not directly applicable to the proposed project. Rather, the analysis presented herein focuses on State and local regulations, which govern the regulatory environment related to transportation and circulation at the project level.

State Regulations

The following are the applicable State environmental regulations relevant to transportation.

Senate Bill 743

In 2013, SB 743 was passed to amend Sections 65088.1 and 65088.4 of the Government Code, amend Sections 21181, 21183, 21186, 21187, 21189.1, and 21189.3 of the Public Resources Code (PRC), to add Section 21155.4 to the PRC, to add Chapter 2.7 (commencing with Section 21099) to Division 13 of the PRC, to add and repeal Section 21168.6.6 of the PRC, and to repeal and add Section 21185 of the PRC, relating to environmental quality. In response to SB 743, the OPR has updated the CEQA Guidelines to include new transportation-related evaluation metrics. In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package along with an updated Technical Advisory related to Evaluating Transportation Impacts in CEQA. Full compliance with the Guidelines became effective July 2020.

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[5] Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018.

As a result of SB 743, and Section 15064.3 of the CEQA Guidelines, as discussed in further detail below, local jurisdictions may no longer rely on vehicle LOS and similar measures related to delay as the basis for determining the significance of transportation impacts under CEQA, and instead a VMT metric should be evaluated.

Technical Advisory on Evaluating Transportation Impacts in CEQA

In December of 2018, the OPR published the Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory), which is a guidance document to provide advice and recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The Technical Advisory is intended to be a resource for the public to use at their discretion, and the OPR does not enforce any part of the recommendations contained therein. The Technical Advisory includes recommendations regarding methodology, screening thresholds, and recommended thresholds per land use type.

Vehicle Miles Traveled-Focused Transportation Impact Study Guide

In May of 2020, Caltrans adopted the Vehicle Miles Traveled-Focused Transportation Impact Study Guide (TISG) to provide direction to lead agencies regarding compliance with SB 743. The TISG replaces the Caltrans' 2002 Guide for the Preparation of Traffic Impact Studies and is for use with local land use projects, not for transportation projects on the State Highway System. The objectives of the TISG are to provide:[6]

a) Guidance in determining when a lead agency for a land use project or plan should analyze possible impacts to the State Highway System, including its users.
b) An update to the Guide for the Preparation of Traffic Impact Studies (Caltrans, 2002) that is consistent with SB 743 and the CEQA Guidelines adopted on December 28, 2018.
c) Guidance for Caltrans land use review that supports state land use goals, state planning priorities, and GHG emission reduction goals.
d) Statewide consistency in identifying land use projects' possible transportation impacts, to the State Highway System, and to identify potential non-capacity increasing mitigation measures.
e) Recommendations for early coordination during the planning phase of a land use project to reduce the time, cost, and/or frequency of preparing a Transportation Impact Study or other indicated analysis.

Caltrans has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, and any improvements to such roadways require Caltrans approval, including SR 65.

California Air Pollution Control Officers Association

The California Air Pollution Control Officers Association (CAPCOA) is a non-profit association of the Air Pollution Control Officers from all 35 local air quality agencies throughout California. Given the connection between air pollution emissions and the use of motor vehicles, the CAPCOA has issued recommendations that can be used by development projects to reduce project-wide VMT. One such document, the Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity, provides methods to quantify the efficacy of certain methods in their ability to reduce VMT and, in turn, greenhouse gas emissions.

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[6] Caltrans. *Vehicle Miles Traveled-Focused Transportation Impact Study Guide*. May 20, 2020.

Local Regulations

The following are the local environmental goals, policies, and regulations relevant to transportation.

City of Wheatland General Plan

The following goals and policies from the City of Wheatland General Plan are applicable to the proposed project.

Goal 2.A To provide for the long-range planning and development of the City's roadway system to ensure the safe and efficient movement of people and goods.

Policy 2.A.1. The City shall plan, design, and regulate the development of the City's street system in accordance with the functional classification system described [in the General Plan] and reflected in the Circulation Diagram and the City's Street Standards and Specifications.

Policy 2.A.4. The City shall assure that new development effectively links both sides of State Route 65 and the railroad tracks at the north and south ends of town.

Policy 2.A.6. The City shall require an analysis of the effects of traffic from proposed major development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. Such improvements may include a fair share of improvements that provide benefits to others.

Policy 2.A.8. The City shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system.

Policy 2.A.9. The City shall limit private access along arterial streets wherever possible.

Goal 2.C To protect residential areas from high-volume and high-speed traffic and its effects and promote bicycling and walking on residential streets.

Policy 2.C.1. The City shall consider the effects of new development on local streets in residential areas and require new development to mitigate significant impacts on residential neighborhoods.

Policy 2.C.3. The City shall consider future needs for street and sidewalk maintenance in approving new development.

Policy 2.C.4. The City shall require ADA compliance for existing and proposed street sidewalks.

Goal 2.D To provide a sufficient amount of convenient, available, accessible, safe, and attractive parking to serve existing and new development throughout the City as needed.

Policy 2.D.1. The City shall require provision of adequate off-street parking in conjunction with new development. The adequacy and appropriateness of parking requirements in the Zoning Ordinance shall be periodically reevaluated.

Goal 2.F To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation for both transportation and recreation.

Policy 2.F.2. The City shall require developers to finance and install pedestrian pathways, bikeways, and multi-purpose paths in new development, as appropriate.

Policy 2.F.8. The City shall require crosswalks and other pedestrian safety measures be designed and installed according to City of Wheatland Ordinances.

City of Wheatland Bikeway Master Plan

The primary purpose of the 2014 Bikeway Master Plan is to ensure the provision and promotion of safe bicycle use by people of all ages for both commuting and recreation within the City and its surrounding environment. The Bikeway Master Plan in intended to establish a comprehensive bikeway system and design new development to foster walking and bicycling. The City of Wheatland Bikeway Master Plan aids the City in achieving its community vision and is a direct implementation of the City of Wheatland General Plan.[7]

Yuba-Sutter Transit NextGen Transit Plan

In May 2023, Yuba-Sutter Transit adopted the Yuba-Sutter Transit NextGen Transit Plan, which was funded by Caltrans through the Sustainable Community Planning Grant Program. The purpose of the NextGen Transit Plan is to develop an operational plan that will improve the customer travel experience by reducing travel time; improve service frequencies and connections (where possible); and introduce new and innovative transit options (where feasible). The major areas of focus for the NextGen Transit Plan service recommendations include aligning fixed route service provided to service demanded, introducing new services to support existing fixed routes, and increasing commuter ridership.

South Yuba Transportation Improvement Authority Traffic Impact Fee Study

In August of 2017, Yuba County and the City of Wheatland entered into a Joint Exercise of Powers Agreement (JPA) creating the South Yuba Transportation Improvement Authority (SYTIA). SYTIA was established with the primary focus of jointly working to improve the regional transportation infrastructure needed to support the growth anticipated in the City as well as within the southern portion of Yuba County.

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[7] City of Wheatland. *City of Wheatland Bikeway Master Plan*. October 2014.

The SYTIA Board took a series of actions beginning in 2018 to establish a local revenue source for the local share of costs of the infrastructure projects planned to be constructed by SYTIA. The infrastructure projects can generally be described as constructing a new high capacity roadway from the terminus of the Lincoln Bypass (SR 65) in Placer County to SR 65 at South Beale Road, constructing a new freeway interchange at SR 65 and South Beale Road, and constructing a high capacity roadway between the new South Beale Road Interchange and the Plumas Lake Blvd Interchange on SR 70. A summary of the study and fee is as follows:

- The SYTIA Traffic Impact Fee would apply to all new development in the unincorporated areas of the County south of the Yuba River as well as within the bounds of the City of Wheatland.
- The Fee would be calculated based on the daily PM peak hour traffic trips generated by the new development, with a new single-family home generating one PM peak hour trip.
- Fee rates for non-residential uses have been converted from PM peak hour to equivalent square footage based on type of non-residential use.
- The estimated total cost of the SYTIA infrastructure projects covered by the Study is $250,000,000, with $100,000,000 being estimated to be generated by the Fee.
- The Study estimates that new development in the area covered by the Fee will generate 35,363 new daily PM peak hour traffic trips.
- The resulting fee is $2,828/PM peak hour trip($100,000,000/35,363)
- Based on current rate of development, the Fee will generate over $1,000,000 per year in revenue.

Traffic Impact Fee Update

Various improvements needed to mitigate traffic impacts within the City of Wheatland may be of city-wide benefit and may best be addressed through an update to the City's existing Traffic Impact Fee program. A Traffic Fee Update may continue to allocate costs on a uniform city-wide basis or may establish distinct areas of benefit for improvements that are used to a greater degree by specific portions of the community. The allocation of projects on a community-wide basis or to specific areas of the City can be determined when the fee update occurs.

4.3.4 IMPACTS AND MITIGATION MEASURES

The standards of significance and methodology used to analyze and determine the proposed project's potential project-specific impacts related to transportation are described below. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Based on Appendix G of the CEQA Guidelines, for the purposes of this EIR, an impact related to transportation is considered significant if the proposed project would:

- Conflict with a program, plan, ordinance, or policy, addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
- Substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

Vehicle Miles Traveled Standard of Significance

As discussed above, the City of Wheatland has not established VMT thresholds. Pursuant to CEQA Guidelines Section 15064.3(b)(3), if existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's VMT qualitatively. Thus, the City uses OPR guidance to analyze VMT impacts. For residential projects, the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA includes a threshold of 15 percent below the existing VMT per capita. Based on a 15 percent reduction of the City's existing VMT per capita of 32.3, the threshold of significance would be 27.45 VMT per capita.

Method of Analysis

The estimated trip generation for the proposed project and the analysis methodology provided in the TIS (see Appendix E of this EIR) prepared for the proposed project by TJKM is discussed below.

Project Trip Generation

The trip generation for the proposed project was calculated using trip generation rates published in the Institute of Transportation Engineers 11th Edition Trip Generation Manual. The applicable rate for the proposed land use is category 210 (Single-Family Detached Housing). Application of the foregoing trip generation rates to the 685 single-family units yields a total of 5,926 daily trips with 429 trips generated in the AM peak hour and 606 trips generated during the PM peak hour. Table 4.3-1 summarizes the trip generation associated with the proposed project.

Table 4.3-1
Project Trip Generation

Land Use	Units	Trip Generation								
		Daily	AM Peak Hour				PM Peak Hour			
			In:Out%	In	Out	Total	In:Out%	In	Out	Total
Single-Family Detached Housing	685	5,926	25:75	107	322	429	63:37	382	224	606

Source: TJKM, 2023.

Project Vehicle Miles Traveled

TJKM estimated VMT per capita associated with the proposed project using the latest SACOG Activity Based Travel Demand Model (SACSIM). The Travel Analysis Zone (TAZ) in the model that the project site is located in is #1368. The number of proposed single-family dwelling units (685) were added into the TAZ for the base year to determine VMT per capita.

Because the proposed project does not meet OPR's VMT screening criteria, two full SACSIM model runs were performed in accordance OPR VMT guidelines. The first run used a base year of 2016 to analyze existing VMT per capita numbers for the City of Wheatland. The second run used a base year of 2016 run with the proposed housing units included. Project-inherent features that would result in reduced VMT per capita were not included in the model run.

Project-Specific Impacts and Mitigation Measures

The proposed project impacts on the transportation system are evaluated in the following discussion based on the thresholds of significance and methodology described above. Each impact is followed by recommended mitigation to reduce the identified impacts, if needed. In the case of traffic operations, specifically intersection and roadway LOS, analysis is not required pursuant to CEQA Guidelines Section 15064.3(a), because congestion and intersection operations do not constitute a transportation impact under CEQA. City of Wheatland staff will separately review LOS for the project's consistency with General Plan LOS policies.

4.3-1 Conflict with a program, plan, ordinance, or policy addressing the circulation system during construction activities. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

Construction activities associated with the proposed project would include use of construction equipment, including vehicles removing or delivering fill material, bulldozers, and other heavy machinery, as well as building materials delivery, and construction worker commutes. The transport of heavy construction equipment to the site, haul truck trips, and construction worker commutes could affect the local roadway network.

Construction workers typically arrive before the morning peak hour and leave before the evening peak hours of the traditional commute time periods. Deliveries of building material (lumber, concrete, asphalt, etc.) would also normally occur outside of the traditional commute time periods. In addition, any truck traffic to the site would follow designated truck routes, and project construction would likely stage any large vehicles (i.e., earth- moving equipment, cranes, etc.) on the site prior to beginning site work and remove such vehicles at project completion. However, detailed information related to the construction schedule during site development, or a construction management plan, is not available. As a result, construction activities could include disruptions to the transportation network near the project site.

In addition to the construction of structures and internal roadways, the proposed project would also include a number of roadway improvements, such as two new entrances into the project site from SR 65, acceleration and deceleration access lanes along SR 65, and connections to existing utility infrastructure in the vicinity of the project site. The installation of such improvements would directly influence the transportation network near the site during construction and could result in roadway or lane closures that adversely affect the project area.

Without proper planning of construction activities, construction traffic could interfere with existing roadway operations during the construction phase, which could result in a risk to public safety. Therefore, project traffic related to construction activities could result in a ***significant*** impact

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.3-1 Prior to issuance of grading and building permits, for all improvements where implementation may cause impacts on traffic along roadways within their respective areas of jurisdiction, the project applicant shall prepare a traffic control plan for review and approval by the City of Wheatland Public

Works Department and the California Department of Transportation (Caltrans). The traffic control plan must follow all applicable City standards. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses shall be maintained at all times, with detours used as necessary during road closures. The traffic control plan shall, at minimum, include the following measures:

- *Maintain the maximum amount of travel lane capacity during non-construction periods, as possible, and provide advanced notice to drivers through construction signage.*
- *Maintain alternate one-way traffic flow past the lay down area and site access when feasible.*
- *Heavy trucks and other construction transport vehicles shall avoid the busiest commute hours (7:00 AM to 8:00 AM and 5:00 PM to 6:00 PM on weekdays).*
- *The contractor(s) shall provide a minimum 72-hour advance notice to the City of access restrictions, which shall include the identification of alternative routes and detours to enable the avoidance of the immediate construction zone.*
- *The contractor(s) shall provide a phone number and community contact for inquiries about the schedule of the construction throughout the construction period.*
- *All construction equipment shall be staged on-site.*

4.3-2 Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway bicycle, and pedestrian facilities, during operations. Based on the analysis below, the impact is *less than significant*.

The following discussion evaluates whether the proposed project would result in impacts to existing or planned pedestrian facilities, bicycle facilities, or transit facilities and services within the project area.

Pedestrian Facilities

Sidewalks do not currently exist adjacent to the project site. However, as previously discussed, sidewalks are consistently present along SR 65 on both sides from Main Street to 1st Street and intermittently present along remaining roadways on both sides in the downtown area of the City. Beyond the study intersections, marked crosswalks are occasionally present at intersection approaches and concrete sidewalks are intermittently present along roadways near the vicinity of the project site

The proposed project would include concrete sidewalks on both sides of all roadways within the development. Additionally, the proposed project would include a multimodal network for pedestrians and bicyclists by way of the 2.80-acre Malone Paseo trail corridor and the 4.62-acre SR 65 landscape corridor. Malone Paseo would run alongside the northern portion of Malone Avenue as an internal north-to-south connection between the proposed residential units. The corridor would include a 10-foot-wide meandering pathway for pedestrian and bicycle uses, and a landscape strip along one street edge. The landscape corridor located along SR 65 to the east would provide a buffer between the proposed residences and SR 65. Sidewalk connections would also be provided throughout the site's internal roadway network.

Overall, the proposed project would provide new pedestrian connections to existing pedestrian facilities. The proposed on-site pedestrian improvements would not physically disrupt an existing pedestrian facility, nor interfere with implementation of a planned pedestrian facility.

Bicycle Facilities

Existing bicycle facilities are not currently located adjacent to the project site. The nearest bicycle facilities in the project vicinity consist of Class II bike lanes on both sides of SR 65 from approximately 160 feet south of Main Street to the northern City limits at the intersection of SR 65 at Hooper Street.

According to the City of Wheatland's 2014 Bikeway Master Plan, additional bicycle facilities are planned to be implemented along roadways in and around the vicinity of the project site, including the following:

- Class II bike lanes along SR 65 east of the project site and along a conceptual roadway that loops within the project site;
- A Class I pedestrian-bike path that extends north-south along Malone Avenue through the project site and connects Main Street with a proposed Class I pedestrian-bike path along the north bank of Bear River;
- The proposed Malone Paseo within the project site; and
- Combination of a Class II bike lane and a "super sidewalk" facility bisecting the project site in the east-west direction.

The proposed project would include the following bicycle facilities:

- Class II bike lanes along both sides of Red Oak Drive, Heritage Oak Way, DeValentine Parkway, and along the south side of SR 65, completing the loop shown in the Bikeway Master Plan;
- A Class I pedestrian-bike path along the proposed Malone Paseo, which follows the existing route of Malone Avenue, and would connect the paved portion of Malone Avenue and Main Street to the north bank of Bear River just west of the existing wastewater treatment plant; and
- Class II bike lanes and concrete sidewalks on both sides of DeValentine Parkway from SR 65 in the east to the western limit of the project site in anticipation of being extended further west in future developments.

Overall, the proposed project would provide new bicycle connections to existing bicycle facilities consistent with the 2014 Bikeway Master Plan. The proposed on-site and off-site improvements would not physically disrupt an existing bicycle facility, nor interfere with implementation of a planned bicycle facility.

Transit Facilities

Existing transit services include the Yuba-Sutter Transit Wheatland Route, with two stops approximately 0.2-mile from the project site, including both the SR 65/3rd Street stop, and the Main Street and C Street stop. Development of the proposed project is not anticipated to conflict with the goals, policies, and objectives found in the Yuba-Sutter Transit NextGen Transit Plan.[8] Additionally, the proposed project would not include features that would conflict with existing or planned transit services. Therefore, development and operation of the proposed project would not adversely affect transit service and facilities.

Implementing the proposed project would result in residential growth, which could generate increased demand for transit facilities and services. According to the OPR Technical Advisory, when evaluating impacts on multimodal transportation networks, the addition of new transit users generally should not be treated as an adverse impact. Additionally, Yuba-Sutter Transit regularly monitors transit performance by gathering information, such as operating costs, vehicle service hours and annual ridership trends. Yuba-Sutter Transit develops triennial performance audits to evaluate the effectiveness and efficiency in its use of Transportation Development Act (TDA) funds to provide public transportation in its service area.[9] Therefore, any increase in demand for transit services near the project site would be assessed periodically. Furthermore, City of Wheatland General Plan Policy 2.A.8 states that new development fees shall be assessed to cover the fair share portion of the development's impact on the local and regional transportation system, and General Plan Policy 2.E.1 states that the City shall work with Yuba-Sutter Transit to implement bus transit services that are timely, cost-effective, and responsive to growth patterns and existing and future transit demand. Therefore, any increase in demand for transit services generated by the proposed project would be evaluated and accommodated through existing strategies, and the proposed project would not conflict with a program, plan, ordinance, or policy related to transit.

Conclusion

Based on the above, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway bicycle, and pedestrian facilities, during operations Thus, the project would result in a ***less-than-significant*** impact related to pedestrian, bicycle, and transit facilities.

Mitigation Measure(s)

None required.

4.3-3 Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

According to the VMT analysis prepared by TJKM, the City of Wheatland baseline VMT per capita is 32.3. As discussed previously, pursuant to OPR guidance,

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[8] Yuba-Sutter Transit. *NextGen Transit Plan*. Adopted May 18, 2023.

[9] Yuba-Sutter Transit. *FY 2019-2021 Triennial Performance Audit of Yuba-Sutter Transit Authority*. December 2022.

residential projects that generate VMT per capita 15 percent less than the City's baseline average may be considered to have a less-than-significant VMT impact. Therefore, the VMT threshold applied to the proposed project is 15 percent less than 32.3, or 27.45 VMT per capita. According to the TIS prepared for the proposed project and as shown in the table below, according to the results of the SACISM model runs, the VMT per capita for the proposed project, without inclusion of any project-inherent features that would result in reduced VMT per capita, would be 30.38 VMT per capita, which is above the 27.45 VMT per capita threshold. Table 4.3-2 summarizes the results of the VMT model run for the proposed project.

Table 4.3-2
VMT Analysis Results

Per Capita VMT			Project Reduction from Average	Threshold Met?
Existing City Average VMT	**15% Reduction Goal**	**Project Generated VMT**		
32.3	27.45	30.38	5.9%	No

Source: TJKM, 2023.

As noted, the VMT model run applied the proposed project units only and did not take into consideration any project-inherent features that would result in reduced VMT per capita. The TIS identifies a number of reduction strategies from the CAPCOA Handbook for Analyzing Greenhouse Gas Emission Reductions that the proposed project could apply to reduce the project-specific VMT per capita. Two of the strategies would be considered inherent features of the proposed project based on the site's location and the proposed design.

Specifically, one strategy is related to improving the pedestrian network. The strategy focuses on creating a pedestrian network within the project and connecting to nearby destinations. Concrete sidewalk improvements count as part of the strategy. The formula to calculate the VMT reduction associated with the strategy, according to the CAPCOA handbook, is the total project pedestrian network length divided by the existing pedestrian network length, subtract that value by one and multiply by an elasticity factor of 0.05. The proposed project would contain approximately 4,500 feet of new sidewalk, and less than one foot of sidewalk currently exists around the project site. Thus, based on the calculation formula set forth in the CAPCOA handbook, the proposed project's inclusion of sidewalks would result in a VMT reduction of 224.95 percent. However, pursuant to the CAPCOA handbook, only a maximum of 6.4 percent reduction is allowed for this CAPCOA reduction strategy; thus, the aforementioned project features would result in a maximum VMT reduction of 6.4 percent.[10]

Another strategy that would be considered inherent with the proposed project is related to implementing traffic calming and low-stress bicycle facilities. The strategy focuses on creating roadway networks of low vehicle speeds and volumes that are more conducive to walking and bicycling. Any bike lane or bikeway improvement would apply towards the allowable VMT reduction for the strategy set forth by the CAPCOA handbook of 1.5 percent. The proposed project is a new development in a

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[10] California Air Pollution Control Officers Association. *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* [Chapter 3]. August 2021.

predominantly undeveloped portion of the City of Wheatland and would include a multimodal network for pedestrians and bicyclists by way of the Malone Paseo trail corridor and SR 65 landscape corridor. Malone Paseo would include a 10-foot-wide meandering pathway for pedestrian and bicycle uses. Sidewalk connections would also be provided throughout the site's internal roadway network. Therefore, the proposed project would be expected to result in a 1.5 percent reduction in VMT due to the incorporation of low-stress bicycle facilities consistent with this CAPCOA reduction strategy.

Accounting for incorporation of the aforementioned CAPCOA reduction strategies that would be considered inherent design features of the proposed project, the proposed project VMT per capita would be reduced by 7.9 percent from what is presented in Table 4.3-2, resulting in a VMT per capita of 27.98, which would still exceed the applicable 27.45 VMT per capita threshold.

Given that the per-capita VMT associated with the proposed project, including the project-inherent VMT reduction features, would not achieve the applicable VMT reduction goal, the proposed project could conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), and a ***significant*** impact could occur.

Mitigation Measure(s)

In accordance with the CAPCOA handbook, implementation of the following mitigation measure would reduce the home-based VMT per capita associated with the proposed project by 2.3 percent, from 27.98 to 27.33, which would be below the applicable threshold of 27.45 VMT per capita. Therefore, the above potential impact would be reduced to a *less-than-significant* level.

4.3-3 *Prior to the issuance of building permits, the project applicant shall develop a Transportation Demand Management (TDM) Plan for review and approval by the City of Wheatland Department of Public Works. The TDM Plan shall contain the following VMT reduction strategy:*

- *Implement community-based travel planning through a residential-based approach to outreach that provides households and residents with information, incentives, and support to encourage the use of alternative modes of transportation to single-occupancy vehicles. Implementation of this measure shall include the project applicant providing future homeowners of the proposed project with information regarding carpooling, vanpooling, and other ride-sharing programs available for residents within the community as part of the Conditions, Covenants and Restrictions (CC&Rs).*

4.3-4 Substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Based on the analysis below, the impact is *less than significant*.

The proposed project would not include any new sharp curves or dangerous intersections and would not be located in the vicinity of any such roadway features. In addition, the design of the on-site circulation system would not involve any features that would increase traffic hazards at the site. In fact, development of the proposed acceleration and deceleration lanes along SR 65 to the north and south of the two proposed intersections would improve site access safety by reducing speed differentials along SR 65.

The project site would be accessible via two proposed full-movement intersections along SR 65 (SR 65/Red Oak Drive and SR 65/DeValentine Parkway). The proposed intersections would be approximately 1,800 feet apart, and SR 65/Red Oak Drive would be approximately 500 feet south of SR 65/State Street. The adequate distances between the proposed and existing intersections indicate little potential interaction between intersection functional areas.

All internal roadways and frontage improvements would be designed consistent with applicable City standards, which would be confirmed during improvement plan review. Furthermore, the proposed project would not introduce incompatible uses, such as farm equipment or heavy-duty truck traffic, to area roadways during operations. Potential impacts related to project construction traffic are discussed under Impact 4.3-1 above.

Based on the above, the proposed project would not substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.3-5 Result in inadequate emergency access. Based on the analysis below, the impact is *less than significant*.

Several factors determine whether a project has sufficient access for emergency vehicles, including the following:

1. Number of access points (both public and emergency access only);
2. Width of access points; and
3. Width of internal roadways.

Site access would be provided by Malone Avenue, which runs in a northwest-to-southeast direction through the project site and continues to travel southeast as a portion of the project site's western boundary. The proposed project would also include development of two arterial roadways, DeValentine Parkway and Red Oak Drive, which would connect to SR 65 at the project site's eastern boundary, and provide two additional access points to the project site. The two proposed intersections on SR 65 would provide an adequate level of site accessibility if one intersection were blocked.The proposed internal collector streets would connect to form a semi-grid pattern within the project site, and would provide access to the proposed residential units and parks throughout the site.

The project would not include any substantial modifications to the planned roadway system in the project area. The width of the access points would be able to accommodate emergency vehicles, and the number of access points would be sufficient to provide emergency services to the proposed project. Additionally, the proposed project would be subject to the City's Site Plan and Design Review process. The City's Site Plan and Design Review process allows various City departments or public agencies, such as the fire district, city engineer, police department, building department, public works, planning director and any other affected city departments or public agencies, to evaluate the proposed project's compliance with the City of Wheatland's standards and regulations. Compliance with such standards and regulations would ensure that all access points and internal roadways would be safely designed so as not to create any hazardous design elements or limit access to emergency vehicles.

While the City currently does not have an official emergency response plan or emergency evacuation plan, the County adopted the current version of the County of Yuba Emergency Operations Plan (EOP) in August 2015.[11] The EOP describes the County's emergency management organization, provides a brief overview of the hazards faced in the County, and is intended to be general in its application and provide for flexibility during response and recovery. During construction of the proposed project, all construction equipment would be staged on-site so as to prevent obstruction of local and regional travel routes in the City that could be used as evacuation routes during emergency events. During operation, the proposed project would provide adequate access for emergency vehicles and would not interfere with potential evacuation or response routes used by emergency response teams. All proposed internal roadways would be designed sufficient to accommodate emergency vehicles. The proposed project would not substantially alter the existing circulation system in the surrounding area.

Based on the above, the proposed project would not result in inadequate emergency access or access to nearby uses, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

Cumulative Impacts and Mitigation Measures

For further detail related to the cumulative setting of the proposed project, refer to Chapter 5, Statutorily Required Sections, of this EIR.

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[11] Yuba County. *County of Yuba Emergency Operations Plan: All-Hazards*. Adopted August 2015.

It should be noted that increased traffic volumes on local roadway facilities under cumulative conditions would not substantially alter performance related to bicycle facilities, pedestrian facilities, transit facilities and services, and emergency vehicle access. Rather, impacts to such facilities under Cumulative Plus Project conditions would be identical to those discussed above under Impacts 4.3-2, 4.3-4, and 4.3-5. In addition, construction activities associated with the project would be complete prior to the 2040 cumulative analysis year. Therefore, such topics are not discussed further in the cumulative analysis presented herein.

Similarly, the VMT impact analysis for Existing Plus Project conditions included under Impact 4.3-3 would also apply to Cumulative Plus Project conditions. The VMT significance threshold compares project-generated VMT per service population to that of existing local and regional development. The VMT comparison is useful because the comparison provides information regarding how the project aligns with long-term environmental goals related to VMT established based on existing development levels. Use of VMT significance thresholds based on existing development levels is recommended in the OPR's Technical Advisory. The Technical Advisory indicates that VMT efficiency metrics, such as VMT per service population, may not be appropriate for CEQA cumulative analysis because they employ a denominator. Instead, the Technical Advisory recommends that an impact finding from an efficiency-based project-specific VMT analysis (i.e., Existing Plus Project conditions) would imply an identical impact finding for a cumulative VMT analysis.[12] An example provided by OPR explains that a project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Therefore, a cumulative analysis of VMT is not presented in this section as the conclusion would remain identical to that presented under Impact 4.3-3.

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[12] Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA* [pg. 6]. December 2018.

4.4 Tribal Cultural Resources

4.4 TRIBAL CULTURAL RESOURCES

4.4.1 INTRODUCTION

The Tribal Cultural Resources chapter of the EIR addresses known and unknown tribal cultural resources in the vicinity of the project area. Pursuant to Public Resources Code (PRC) Section 21074, tribal cultural resources are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources, or included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.

This chapter summarizes the existing setting with respect to tribal cultural resources, identifies thresholds of significance, evaluates potential project impacts to such resources, and sets forth mitigation measures. Information presented in this chapter is primarily drawn from a Sacred Lands File (SLF) search conducted by the California Native American Heritage Commission (NAHC), project notification and offer to consult letters sent by the City to Native American individuals and organizations, follow-up Native American consultation pursuant to Assembly Bill (AB) 52, direct input from the United Auburn Indian Community of the Auburn Rancheria (UAIC), and a Cultural Resources Inventory and Evaluation Report prepared by ECORP Consulting, Inc.,[1] as well as the City of Wheatland General Plan[2] and the General Plan EIR.[3]

4.4.2 EXISTING ENVIRONMENTAL SETTING

The sections below provide an ethnographic overview of tribal history within the project area, to the extent such information is known, as well as an overview of the tribal outreach and consultation conducted by the City for the proposed project, and any known tribal cultural resources within the area.

Ethnographic Overview of the Project Area

Linguists and ethnographers tracing the evolution of languages have found that most of the indigenous languages of the California region belong to one of five widespread North American language groups (the Hokan and Penutian phyla, and the Uto-Aztecan, Algic, and Athabaskan language families). The distribution and internal diversity of four of the groups suggest that original centers of dispersal were outside, or peripheral to, the core territory of California, which are the Central Valley, the Sierra Nevada, the Coast Range from Cape Mendocino to Point Conception, and the Southern California coast and islands. Only languages of the Hokan phylum can be traced back to populations inhabiting parts of California's core region during the Archaic period, and hints of connections exist between certain branches of Hokan, such as between the Salinan and Seri, which suggest that at least some of the Hokan languages could have been brought into California by later immigrants, primarily from the Southwest and northwestern Mexico.

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[1] ECORP Consulting, inc. *Cultural Resources Inventory and Evaluation Report for the Heritage Oaks East Project.* December 2023.

[2] City of Wheatland. *City of Wheatland General Plan Policy Document*. Adopted July 2006.

[3] City of Wheatland. *City of Wheatland General Plan Final Environmental Impact Report*. May 2006.

At the time of Euroamerican settlement, people inhabiting the project area were of the Nisenan, and spoke Southern Maidu, one of subgroups belonging to the Penutian linguistic family. The Nisenan's aboriginal territory falls within present-day Yuba County. The territory of the Nisenan encompassed the drainages of the Yuba, Bear, and American rivers and the lower drainages of the Feather River. The western boundary of the Nisenan territory was the west bank of the Sacramento River, the eastern boundary was the crest of the Sierra Nevada, the southern boundary was a few miles south of the American River, and the northern boundary has not been accurately determined due to the similarities of the languages to the neighboring groups in the area. Primary village sites of the Nisenan were occupied continually, while temporary sites were visited to procure resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

The UAIC is a federally recognized Tribe comprised of both Miwok and Maidu (Nisenan) Tribal members who are traditionally and culturally affiliated with the project area. The Tribe has a deep spiritual, cultural, and physical ties to their ancestral land and are contemporary stewards of their culture and landscapes. The Tribal community endeavors to foster a continuity and endurance of their ancestors by maintaining their connection to their history and culture. It is the Tribe's stated goal to ensure the preservation and continuance of their cultural heritage for current and future generations.

Tribal Outreach

The following discussion includes a description of the tribal outreach activities that were conducted for the project site by ECORP during preparation of the site-specific cultural resources analysis. The City also conducted formal AB 52 and Senate Bill (SB) 18 consultation for the proposed project, which is discussed in later sections of this chapter.

ECORP contacted the NAHC requesting a search of the SLF for traditional cultural resources within or near the project site. The results of the search returned by the NAHC on November 29, 2023 suggested that sacred sites exist within the vicinity of the proposed project. The NAHC provided contact information for tribal members or organizations affiliated with the region, and recommended that the tribes be contacted for more information on the potential for Native American cultural resources within or near the project site.

Tribal Consultation

Pursuant to AB 52, project notification letters were sent by the City on June 9, 2023 to tribes who requested notification of proposed projects within this geographic area. Specifically, AB 52 notification letters were sent to the UAIC of Auburn Rancheria and Enterprise Rancheria.

Anna Starkey, a Cultural Regulatory Specialist representing the UAIC, responded to the AB 52 letter on March 18, 2024. She indicated that the project site is in a culturally sensitive area, which includes burials in proximity to the development. She also requested more project-specific information be provided. Additionally, the UAIC tribal historic preservation department requested to have tribal monitors on the proposed project due to the cultural sensitivity of the area, which includes known burials in proximity to the project site. The City subsequently initiated consultation with the UAIC. Consultation included the provision of design plans, the Cultural Resources Inventory and Evaluation Report prepared for the proposed project prepared for the project by ECORP, and the Biological Resources Assessment prepared for the project by ECORP to the UAIC for review. After reviewing the project materials, the UAIC determined that a site visit would not be necessary. The UAIC provided tribe-specific mitigation recommendations, which are included in the analysis below, to be implemented as part of the proposed project. Consultation with the UAIC has not yet been closed.

Additionally, pursuant to SB 18, project notification letters were sent by the City on June 28, 2023 to tribal members or organizations identified by the NAHC as having cultural or tribal affiliation with the project area. Specifically, SB 18 notification letters were sent to the Estom Yumeka Maidu Tribe of the Enterprise Rancheria, the Pakan'yani Maidu of Strawberry Valley Rancheria, Tsi Akim Maidu, the UAIC of Auburn Rancheria, Wilton Rancheria, and the Colfax-Todds Valley Consolidated Tribe. Responses to the SB 18 project notification letters were not received during the 90-day consultation period.

Known Tribal Cultural Resources

As described in detail above, the City of Wheatland and the surrounding area are known to have been occupied by Native American groups for thousands of years prior to settlement by non-Native peoples. As such, archaeological materials associated with Native American tribes, including human burials, have been found throughout the City.

Based on the results of the SLF search requested by ECORP, the project site is located within an area with the potential for Native American cultural resources to be present. However, during the course of the field surveys conducted by ECORP as part of the Cultural Resources Inventory and Evaluation Report, ECORP conducted periodic boot-scrape tests along the pre-1862 alignment of Bear River and archaeological resources associated with Native American tribes were not discovered. The project site has also been heavily disturbed by previous mass grading and landscaping activities, and has been recently disced. However, the UAIC indicated that the tribe's records show known burials in proximity to the project site.

ECORP requested a search for the project site at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) at California State University, Sacramento on October 30, 2023. The CHRIS search concluded that the project site did not have any recorded resources.

4.4.3 REGULATORY CONTEXT

Federal, State, and local governments have developed laws and regulations designed to protect significant tribal cultural resources that may be affected by actions that they undertake or regulate. The following section contains a summary of basic federal and State laws governing preservation of tribal cultural resources of national, regional, State, and local significance.

Federal Regulations

The following are the federal environmental laws and policies relevant to tribal cultural resources.

Section 106 for the National Historical Preservation Act of 1966

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historical Preservation Act (NHPA) of 1966. Section 106 of NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 Code of Federal Regulations (CFR) Part 800. The goal of the Section 106 review process is to offer a measure of protection to sites, which are determined eligible for listing on the National Register of Historic Places (NRHP). The criteria for determining NRHP eligibility are found in 36 CFR Part 60. Amendments to the Act (1986 and 1992) and subsequent revisions to the implementing regulations have, among other things, strengthened the provisions for Native American consultation and participation in the Section 106 review process. While federal agencies must follow federal regulations, most projects by private developers and landowners do not require this level of compliance. Federal regulations only come into play in the private sector if a project requires a federal permit or uses federal funding.

State Regulations

The following are the State environmental laws and policies relevant to tribal cultural resources.

Assembly Bill 52

AB 52 adds tribal cultural resources to the categories of cultural resources in CEQA, which had formerly been limited to historic, archaeological, and paleontological resources. "Tribal cultural resources" are defined as either:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Under AB 52, a project that may cause a substantial adverse change in the significance of a tribal cultural resource is defined as a project that may have a significant effect on the environment. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact. AB 52 (PRC 21080.3.1) requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area. If the tribe(s) requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe(s). Consultation may include discussing the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe(s).

Senate Bill 18

SB 18, signed into law in September 2004, requires local (city and county) governments to consult with California Native American tribes, when amending or adopting a general plan or specific plan, or designating land as open space, in order to aid in the protection of traditional tribal cultural places ("cultural places"). The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places. The consultation and notice requirements apply to adoption and amendment of both general plans (defined in Government Code Section

65300 et seq.) and specific plans (defined in Government Code Section 65450 et seq.). The proposed project includes a General Plan Amendment, and, thus, is subject to SB 18 consultation requirements.

Public Resources Code Section 5024.1(c)

According to PRC Section 5024.1(c), a resource may be listed as an historical resource in the California Register if the resource meets any of the following NRHP criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history.

Local Regulations

The following are the local environmental laws and policies relevant to tribal cultural resources.

City of Wheatland General Plan

Goals and policies from the City's General Plan related to tribal cultural resources are presented below.

Goal 7.D To preserve Wheatland's Native American heritage.

Policy 7.D.1. The City shall refer development proposals that may adversely affect archaeological sites to the North Central Information Center at California State University, Sacramento, and the Northeast Information Center at California State University, Chico.

Policy 7.D.2. The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the California Archaeological Inventory, the North Central Information Center at California State University, Sacramento, the Northeast Information Center at California State University, Chico, conducting a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist.

4.4.4 IMPACTS AND MITIGATION MEASURES

The following section describes the standards of significance and methodology used to analyze and determine the proposed project's potential impacts related to tribal cultural resources. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, an impact related to tribal cultural resources is considered significant if the proposed project would:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k); or
    - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Method of Analysis

The impact analysis contained in this chapter is primarily based on information from local Native American tribes provided as part of tribal consultation conducted pursuant to AB 52 and SB 18, and information included in a Cultural Resources Inventory and Evaluation Report prepared for the project by ECORP. The methods of analysis are described in further detail below.

Native American Tribal Consultation

In compliance with AB 52 (PRC Section 21080.3.1), the City of Wheatland distributed a project notification letter to each of the following Native American tribes or individuals with the potential to have knowledge of cultural resources in the project area on June 9, 2023:

- United Auburn Indian Community of Auburn Rancheria; and
- Estom Yumeka Maidu Tribe of the Enterprise Rancheria.

The City received a response from the UAIC on March 18, 2024, requesting formal consultation under AB 52. The UAIC requested copies of all environmental documentation for the proposed project related to cultural resources, which were provided to the tribe. Additionally, UAIC requested a site visit, however, after reviewing the project materials the UAIC decided a site visit would not be necessary.

Additionally, pursuant to SB 18, the City of Wheatland distributed a project notification letter to each of the following Native American tribes identified by the NAHC as having cultural or tribal affiliation with the project area on June 28, 2023:

- Estom Yumeka Maidu Tribe of the Enterprise Rancheria;
- Pakan'yani Maidu of Strawberry Valley Rancheria;
- Tsi Akim Maidu;
- United Auburn Indian Community of Auburn Rancheria;
- Wilton Rancheria; and
- Colfax-Todds Valley Consolidated Tribe.

Responses to the SB 18 project notification letters were not received during the 90-day consultation period.

Cultural Resources Inventory and Evaluation Report

The Cultural Resources Inventory and Evaluation Report prepared by ECORP included a search of the SLF by the NAHC, a records search at the NCIC of the CHRIS, literature and map review, and a field survey. The foregoing components of the Cultural Resources Inventory and Evaluation Report are discussed further below.

NAHC Sacred Lands File Search

As discussed above, ECORP contacted the NAHC to request a search of the SLF to determine whether known tribal cultural resources are located within or near the project area. The SLF is populated by members of the Native American community who have knowledge about the locations of tribal resources. In requesting a search of the SLF, ECORP solicited information from the Native American community regarding tribal cultural resources; however, the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable State and federal law.

North Central Information Center Records Search

A cultural resources records search for the project area was completed at the NCIC of the CHRIS at California State University, Sacramento, on October 30, 2023. The records search was conducted to determine the extent of prior surveys conducted in the project area, and identify all previously recorded cultural resources including prehistoric and historic archaeological sites, historic buildings, structures, objects, or districts within and near the proposed project. The record search required a review of pertinent NCIC base maps that reference cultural resource survey and excavation reports, recorded prehistoric and historic archaeological sites, historic-period maps, and literature for the project area of potential effects (APE), located in Yuba County. According to records from the NCIC, 21 previous cultural resource studies were conducted in or within 0.5-mile of the project site. Of the 21 studies, one was conducted within the project site (NCIC Report Number 14050). The records search included a review of the following federal and State inventories:

- 1851 Map of Jonson Rancho (U.S. District Court 1852);
- 1856 Plat map of Johnson Rancho (Shimidt 1856);
- BLM GLO Plat maps for Township 13 North, Range 5 East from 1856 and 1868;
- USGS Smartsville, California topographic quadrangle maps (1:125,000 scale) from 1888 and 1891;
- USGS Sacramento, California topographic quadrangle map (1:125,000 scale) from 1891;
- USGS Wheatland, California and Sheridan, California topographic quadrangle maps (1:31,680 scale) from 1910.
- USGS Wheatland, California topographic quadrangle map (1:24,000 scale) from 1947 (including the 1973 photo revised version); and
- USGS Sheridan, California topographic quadrangle map (1:24,000 scale) from 1953 (including the 1973 photo revised version) and 1992.

Literature and Map Review

ECORP conducted research to obtain archaeological, ethnographic, historical, and environmental information regarding the project site. The records search included a review of historical aerial photographs taken in: 1947, 1952, 1957, 1962, 1984, 1993, 1998, 2005, 2006, 2010, and between 2022 and 2023 for any indications of property usage and built environment. ECORP also conducted a search for a local historical registry. However, such a registry does not exist in Yuba County.

Field Survey Methods

ECORP conducted an intensive pedestrian survey of the APE on October 26 and 27, 2023 using 15-meter transects. ECORP expended four days in the field. At the time, ECORP examined the ground surface for indicators of surface or subsurface cultural resources. The archaeologists inspected the general morphological characteristics of the ground surface for indications of subsurface deposits which could be manifested on the surface. Additionally, ECORP conducted periodic boot-scrape tests along the pre-1862 alignment of Bear River.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above.

4.4-1 Cause a substantial adverse change in the significance of a tribal cultural resource, as defined in PRC Section 21074. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

As noted previously, a records search of the NAHC SLF indicated the presence of potential tribal cultural resources within the project site and/or within the vicinity. Additionally, the UAIC indicated that the tribe's records show known burials in proximity to the development. Considering the results of the literature search and the prehistory and history of the area, the project site was determined by ECORP to have a relatively high potential for buried archaeological resources within the project area. However, the likelihood of discovering buried archaeological resources is mitigated by the prior usage of the property as an orchard and for agriculture, as orchard trees' root systems are known to infiltrate and destroy even deeply buried cultural deposits. Additionally, tribal cultural resources were not discovered within the project areas depth of disturbance during the extensive grading, clearing, and discing operations that occurred within the project area in 2006, or with the continued, more recent, discing of the project site. Nonetheless, even with the prior disturbance that has occurred within the project site, according to ECORP the likelihood of encountering undiscovered and intact tribal cultural resources during buildout of the proposed project is considered to be moderate.

Based on the above, ground-disturbing activities associated with the proposed project could cause a substantial change in the significance of a tribal cultural resource as defined in PRC Section 21074 if unknown buried tribal cultural resources are discovered, and a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

4.4-1(a) Prior to initiation of construction, all construction crew members, consultants, and other personnel involved in project implementation shall *receive project-specific tribal cultural resource awareness training. The training shall be conducted in coordination with qualified cultural resource specialists and representatives from culturally-affiliated Native American Tribes. The training will emphasize the requirement for confidentiality and culturally-appropriate, respectful treatment of any find of significance to culturally-affiliated Native Americans Tribes. All personnel required to receive the training shall also be required to sign a form that acknowledges receipt of the training, which shall be submitted to the City of Wheatland Community Development Department for review and approval.*

As a component of the training, a brochure will be distributed to all personnel associated with project implementation. At a minimum the brochure shall discuss the following topics in clear and straightforward language:

- *Field indicators of potential archaeological or cultural resources (i.e., what to look for; for example: archaeological artifacts, exotic or non-native rock, unusually large amounts of shell or bone, significant soil color variation, etc.);*
- *Regulations governing archaeological resources and tribal cultural resources;*
- *Consequences of disregarding or violating laws protecting archaeological or tribal cultural resources; and*
- *Steps to take if a worker encounters a possible resource.*

The training shall include project-specific guidance for on-site personnel including agreed upon protocols for resource avoidance, when to stop work, and who to contact if potential archaeological or tribal cultural resources are identified. The training shall also direct work to stop, and contact with the County Coroner and the NAHC to occur immediately, in the event that potential human remains are identified. NAHC will assign a Most Likely Descendant if the remains are determined by the Coroner to be Native American in origin.

4.4-1(b) *The following language shall be noted on project Improvement Plans, subject to review and approval by the City of Wheatland Community Development Department, and shall be implemented during project construction:*

> *If potential tribal cultural resources, archaeological resources, other cultural resources, articulated, or disarticulated human remains are discovered during construction activities, all work shall cease within 100 feet of the find (based on the apparent distribution of cultural resources). Examples of potential cultural materials include midden soil, artifacts, chipped stone, exotic (non-native) rock, or unusual amounts of baked clay, shell, or bone.*
>
> *A qualified cultural resources specialist from the Lead Agency and Native American Representative from the traditionally and culturally*

affiliated Native American Tribe(s) will assess the significance of the find and make recommendations for further evaluation and treatment as necessary. Culturally appropriate treatment that preserves or restores the cultural character and integrity of a tribal cultural resource may be, but is not limited to, processing materials for reburial, minimizing handling of cultural objects, leaving objects in place within the landscape, construction monitoring of further construction activities by Tribal representatives of the traditionally and culturally affiliated Native American Tribe, and/or returning objects to a location within the project area where they will not be subject to future impacts. The United Auburn Indian Community of the Auburn Rancheria (UAIC) does not consider curation of tribal cultural resources to be appropriate or respectful and requests that materials not be permanently curated, unless specifically requested by the Tribe.

If articulated or disarticulated human remains are discovered during construction activities, the County Coroner and Native American Heritage Commission shall be contacted immediately. Upon determination by the County Coroner that the find is Native American in origin, the Native American Heritage Commission will assign the Most Likely Descendant(s) who will work with the project proponent to define appropriate treatment and disposition of the burials.

Following a review of the find and consultation with appropriate experts, the authority to proceed may be accompanied by the addition of development requirements which provide for protection of the site and/or additional measures necessary to address the unique or sensitive nature of the site. The treatment recommendations made by the cultural resource specialist and the Native American Representative will be documented in the project record. Any recommendations made by these experts that are not implemented, must be documented and explained in the project record. Work in the area(s) of the cultural resource discovery may only proceed after authorization is granted by the City of Wheatland Community Development Department following coordination with cultural resources experts and tribal representatives as appropriate.

4.4-1(c) The following language shall be noted on project Improvement Plans, subject to review and approval by the City of Wheatland Community Development Department, and shall be implemented during project construction:

The project proponent shall give at least two (2) weeks' notice prior to initiating ground-disturbing activities within the mapped sensitive areas agreed upon during AB 52 consultation between the City of Wheatland and the UAIC (confidential mapped areas provided to the City). The purpose of the notification will be to allow UAIC the opportunity to conduct monitoring. In the event that UAIC does not *respond, or a tribal monitor does not report to the job site at the scheduled time, construction activities may proceed without monitoring as long as at no time, regardless of the presence or absence of a tribal monitor, shall suspected tribal cultural resources be mishandled or disrespected.*

A contracted Tribal Monitor(s) shall monitor the vegetation grubbing, stripping, grading, trenching, and other ground-disturbing activities in the project area. All ground-disturbing activities shall be subject to Tribal Monitoring unless otherwise determined unnecessary by the UAIC.

The Tribal Monitor shall have the authority to temporarily pause ground disturbance within 100 feet of a discovery for a duration long enough to examine the resource. If no resources are identified, then construction activities shall proceed, and no agency notifications are required. In the event that a tribal cultural resource is identified, the Tribal Monitor shall flag off the discovery location and notify the City immediately to coordinate regarding appropriate and respectful treatment pursuant to State law.

The Tribal Monitor shall wear appropriate construction safety equipment including steel-toed boots, construction vest, and hard hat.

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, “cumulative impacts” refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. For further detail related to the cumulative setting of the proposed project, see Chapter 5, Statutorily Required Sections, of this EIR.

4.4-2 Cumulative loss of tribal cultural resources. Based on the analysis below, the cumulative impact is *less than significant*.

Generally, while some tribal cultural resources may have regional significance, the resources themselves are site-specific, and impacts to them are project-specific. For example, impacts to a subsurface tribal cultural resource at one project site would not generally be made worse by impacts to a tribal cultural resource at another site due to development of another project. Rather, the resources and the effects upon them are generally independent. A possible exception to the aforementioned general conditions would be where a tribal cultural resource represents the last known example of its kind or is part of larger resource site. For such a resource, cumulative impacts, and the contribution of a project to them, may be considered cumulatively significant.

As described throughout this chapter, the project site does not contain known resources that would be eligible for inclusion on the NRHP or considered significant pursuant to CEQA. Furthermore, implementation of the project-specific mitigation measures set forth in this EIR (Mitigation Measures 4.4-1[a] through 4.4-1[c]) would ensure that any impacts to previously unknown, subsurface resources that are discovered on the project site during construction activities are reduced to less than significant.

Similar to the proposed project, future development projects within the City and Yuba County would be required to consult with tribes culturally and traditionally affiliated with a project area to implement project-specific mitigation to ensure any potential impacts to identified tribal cultural resources are reduced to a less-than-significant level, where possible. Therefore, given that tribal cultural resource impacts are generally site-specific and each future project within the City and Yuba County would be required to mitigate such impacts, any potential impacts associated with cumulative buildout of the City and Yuba County would not combine to result in a significant cumulative impact.

Based on the above, the potential for impacts related to a cumulative loss of tribal cultural resources, to which implementation of the proposed project might contribute, is ***less than significant.***

Mitigation Measure(s)

None required.

4.5 Utilities and Service Systems

4.5 UTILITIES AND SERVICE SYSTEMS

4.5.1 INTRODUCTION

The Utilities and Service Systems chapter of the EIR summarizes the setting information and identifies potential new demands resulting from the proposed project on utilities and service systems, including water, sanitary sewer, electric power, natural gas, telecommunication, solid waste disposal, and storm drainage services. The chapter evaluates the sufficiency of water supplies to meet the project's water demand, the adequacy of the wastewater treatment system required to serve the project, the project's compliance with applicable regulations related to solid waste, and the project's potential to create or contribute runoff water in excess of the existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Information for the Utilities and Service Systems chapter related to water supply and conveyance and sanitary sewer systems was primarily drawn from the Water Supply Assessment (WSA) (see Appendix F of this EIR) prepared for the proposed project by Luhdorff and Scalmanini Consulting Engineers (LSCE)[1] and the Sewer System Master Plan prepared for the project by MHM, Inc. (see Appendix G of this EIR).[2] In addition, information was sourced from the City of Wheatland General Plan[3] and associated General Plan EIR.[4]

It should be noted that impacts related to water quality, groundwater supplies, recharge, and flooding are addressed in Chapter 4.6, Other Effects, of this EIR, while impacts related to the creation of runoff that could exceed the capacity of the planned stormwater drainage system are discussed herein. Information related to drainage was primarily drawn from the Interim Drainage Plan prepared for the proposed project by MHM, Inc. (see Appendix H of this EIR).[5]

4.5.2 EXISTING ENVIRONMENTAL SETTING

The following section describes the existing utilities and service systems in the project area, including water supply, wastewater conveyance and treatment, storm drainage, solid waste, and gas, electric, and telecommunication infrastructure.

Water Supply and Delivery Infrastructure

The City of Wheatland Public Works Department operates the City's water system and provides water to the entire City solely from groundwater. According to the WSA, the City currently serves potable drinking water to an estimated 3,500 people through approximately 1,130 service connections comprised of 1,018 single-family residential connections, 42 multi-family residential connections, 63 commercial/institutional connections, and one agricultural irrigation connection. Six additional connections are categorized as "other." The City's Public Works Department operates six groundwater wells, two storage tanks, a pump station, approximately 21 miles of

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[1] Luhdorff and Scalmanini Consulting Engineers. *Water Demand and Supply Assessment with Heritage Oaks Development in the City of Wheatland, California.* October 2023.

[2] MHM, Inc. *Technical Report Sanitary Sewer: Heritage Oaks East Estates Sewer System Master Plan.* June 30, 2023.

[3] City of Wheatland. City of Wheatland *General Plan Policy Document*. Adopted July 2006.

[4] City of Wheatland. *City of Wheatland General Plan Final Environmental Impact Report*. May 2006.

[5] MHM, Inc. *Basis of Design Report (Revised) Heritage Oaks East Estates Drainage Area Interim Drainage Plan.* May 31, 2024.

water main lines ranging in size from four to 12 inches in diameter, water meters, and a Supervisory Control and Data Acquisition (SCADA) system. The water system consists primarily of looped mains, with the exception of cul-de-sac streets.

With respect to the City's six groundwater wells, which are numbered as Wells 3 through 8, the total source capacity is 4,050 gallons per minute (gpm), with Well 8 being the City's largest source at a capacity of 850 gpm. Well 7 has been offline since 2015 due to chlorine residual issues; thus, the current total source capacity, with Well 7 offline, is 3,570 gpm. Four of the well sites have dedicated permanent standby power with automatic switching in case of a power outage, while the other two well sites have a receptacle plug available for a portable generator. The depth to groundwater is approximately 80 to 100 feet, with the wells drawing water from depths ranging from 100 to 400 feet below grade.

Water treatment facilities are not located within the City; instead, 12.5 percent sodium hypochlorite is injected for disinfection at each well site. The City has two storage tanks, which provide a total storage capacity of 0.73 million gallons (mg). Tank 1 is elevated and determines system pressure, which ranges between 49 to 51 pounds per square inch (psi) throughout the City's one pressure zone. A booster pump station is located at Tank 2 with three domestic supply booster pumps and one fire flow booster pump. Wells 4, 5, 6, and 8 pump directly to the water distribution system, which fills Tank 1. Well 3 pumps to Tank 2.

The project site contains an existing well located in the project site's 0.86-acre Parcel B. Existing water delivery infrastructure is located to the north of the site within existing roadways, such as Main Street and Malone Avenue.

Water Supply and Demand

The project site is located within the South Yuba Subbasin, which lies within the Sacramento Valley Groundwater Basin. The South Yuba Subbasin is bounded on the north by the Yuba River, which separates the South Yuba Subbasin from the North Yuba Subbasin, on the west by the Feather River, on the south by the Bear River, and on the east by the Sierra Nevada. According to California Department of Water Resources (DWR) Groundwater Bulletin 118 (DWR Bulletin 118), the subbasin encompasses approximately 107,000 acres with a surface area of approximately 89,000 acres (138 square miles). Elevations range from approximately 150 feet in the northwest portion of the subbasin to approximately 30 feet in the southwest portion near the confluence of the Feather and Bear rivers. The average annual precipitation in the subbasin ranges from 20 to 24 inches.

The South Yuba Subbasin aquifer system is comprised of continental deposits of Quarternary (Recent) to Late Tertiary (Miocene) age with a cumulative thickness that increases from a few hundred feet near the Sierra Nevada foothills to greater than 1,400 feet along the western margin. Recharge to the subbasin is derived primarily through the highly permeable stream and floodplain deposits along the Bear River, Yuba River, Feather River, and Honcut Creek. The potential for artificial recharge in the subbasin is considered limited because areas with available storage capacity commonly have overlying soils with low infiltration rates.

Sustainable yield is defined as the maximum quantity of water, calculated over a base period representative of long-term conditions in the subbasin, and includes any temporary surplus that can be withdrawn annually from a groundwater supply without causing an undesirable result. Unlike many medium- and high-priority basins, groundwater extraction in the Yuba Subbasins is not considered to be more than or near the sustainable yield. According to the Yuba Subbasins Groundwater Sustainability Plan, the sustainable yield for the South Yuba Subbasin is 146,000 acre-feet per year (AFY).[6]

Historical water production is depicted in Figure 4.5-1 for the period of 2009 to 2022. Data for 2016 is not included as the monthly production data from July to December 2016 was not available as part of preparation of the WSA. Beginning in 2014, annual water production was lower than historical rates, but increased in 2022. In general, the yearly production was roughly between 200 to 350 million gallons per year (mgy). Population and commercial development in the City were relatively constant, which did not result in major changes in water production. The lowest production of 199 mgy was during the dry year of 2015. The maximum production month occurred in July 2022.

Prior to 2020, water consumption within the City of Wheatland was comprised of approximately 60 percent residential usage, eight percent commercial/institutional usage, 10 percent landscape irrigation usage, and 22 percent system losses. Pursuant to the WSA, the estimated losses were based on comparing production and consumption data from 2009 through 2019 and typically changed from year to year due to varying operational practices, leakage, and old mechanical meters. After 2020, water consumption was comprised of approximately 44 percent residential usage, 11 percent commercial/institutional usage, three percent other uses and corporation yard usage, seven percent agricultural irrigation usage, and 36 percent system losses. The estimated losses were based on comparing production and consumption data. Overall, variations in customer usage may be partially attributed to water-conservation measurements and drought regulations in place at the time. Higher water usage in 2022, for example, could be attributed to being a non-drought year.

The average annual consumption and losses for the years 2009 through 2022 (excluding 2016) are shown in Figure 4.5-2 below. The metering data records were plotted to show the average total consumption by month and average total production by month, as shown in Figure 4.5-3. In addition, Table 4.5-1 summarizes the current annual water consumption per service connection within the City limits, as well as water use factors and equivalent dwelling units (EDUs) used for estimating future water demands associated with the City's existing connections. An EDU is the amount of water used by a typical single-family residential house. One EDU is estimated to require on average approximately 0.27 gpm, 393 gallons per day (gpd), 11,786 gallons per month, and 143,392 gallons per year (gpy).

Table 4.5-1
Current Annual Water Consumption per Service Connection

Classification	Existing Connections	Average Usage per Connection (gpm)	Water Use (mgy)	EDU per Connection	EDU
Residential (total)	1,170	0.27	168	1.0	1,170
Commercial/Industrial	74	0.32	12	1.2	86
Landscape Irrigation	14	4.31	32	15.8	221
Total	1,258	-	212	-	1,477

Source: Luhdorff and Scalmanini, 2023.

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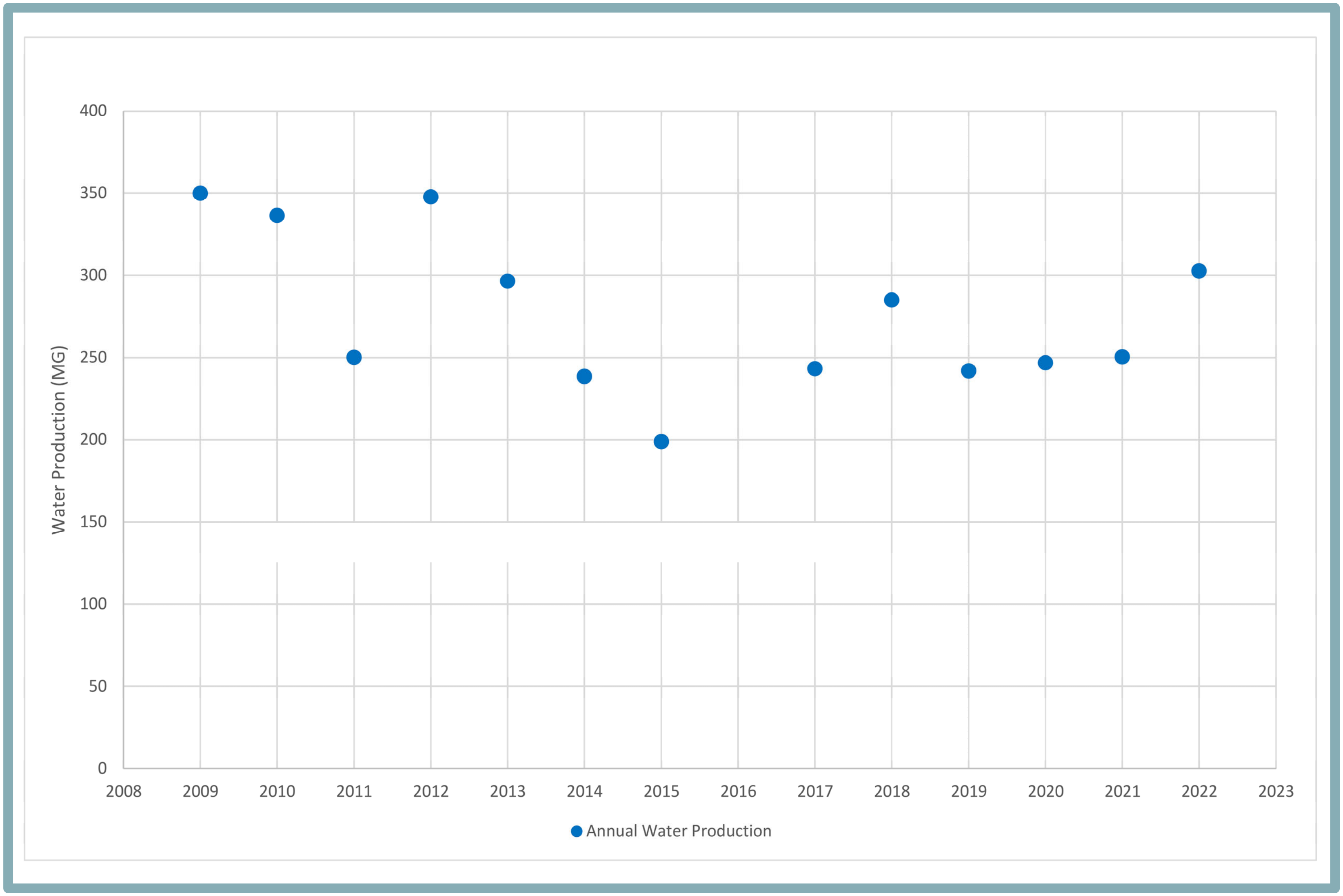
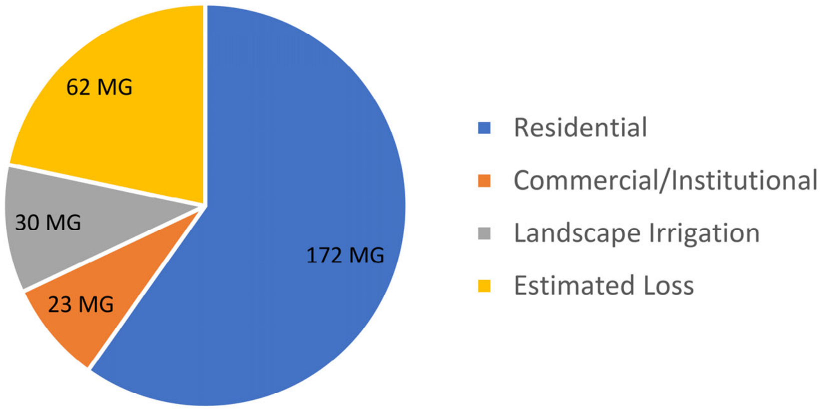
[6] Yuba Water Agency. *Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan* [pg. 2-183]. December 2019.

Figure 4.5-1
Historical Water Production



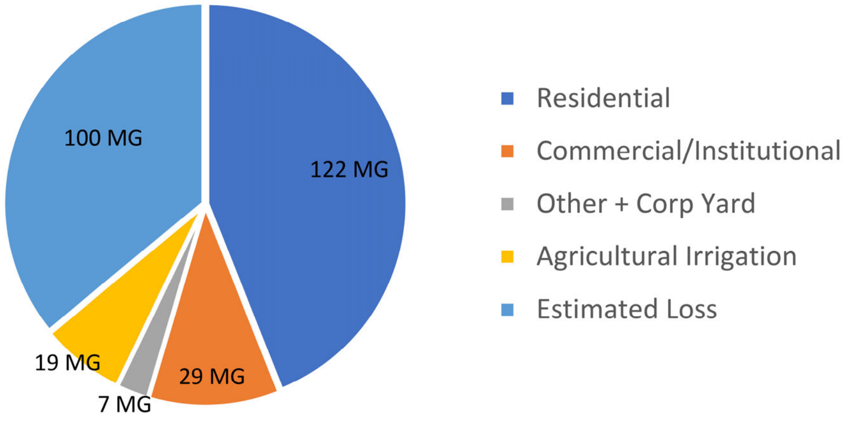
Source: Luhdorff and Scalmanini, 2023.

Figure 4.5-2
Average Annual Consumption and Losses



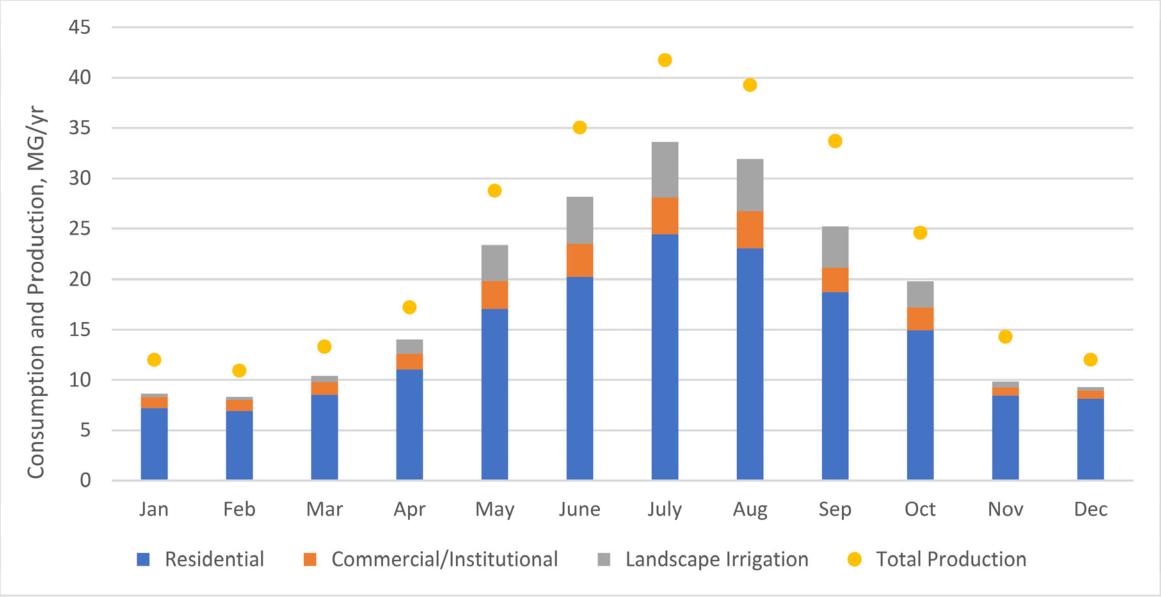
Above: *Average Annual Consumption and Losses (2009-2019)*

Below: *Average Annual Consumption and Losses (2021-2022)*

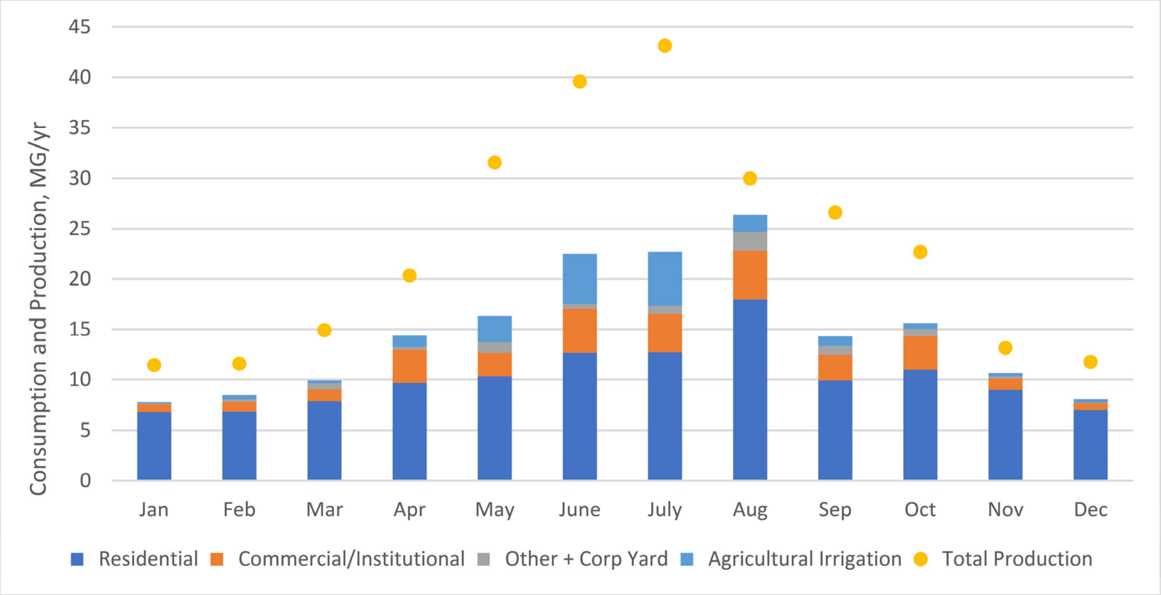


Source: Luhdorff and Scalmanini, 2023.

Figure 4.5-3
Average Monthly Consumption and Production Rates



Average Monthly Consumption and Production (2009-2019)



Average Monthly Consumption and Production (2021-2022)

Source: Luhdorff and Scalmanini, 2023.

It should be noted that data collected by the City includes estimated losses based on comparing production and consumption data. The losses typically change year by year due to varying operational practices (e.g., hydrant flushing), leakage, and old mechanical meters. According to the WSA, the City commented that the water loss dropped from a historical rate of 20 to 35 percent to 10 percent. As such, a 10 percent allowance was included to account for operational variations and ensure that the usage per connection reflected the total water requirements.

Wastewater Conveyance and Treatment

The City's Public Works Department operates the City's sanitary sewer collection system and wastewater treatment plant (WWTP). The collection system is comprised of gravity collection lines and main lines ranging in size from four to 15 inches in diameter. Due to the relatively flat topography within the City limits, the City maintains five sewage lift stations with force mains ranging in size from four to 12 inches in diameter. All sewage must be lifted by sewer lift stations to reach the WWTP. The majority of the buildings within the City limits that require wastewater disposal are connected to the City sewer system; only a few private septic tank/leach field systems exist within the City and are located in areas that have been more recently annexed.

The existing Wheatland WWTP is located near the southern portion of the project site, in the southern region of the City at the end of Malone Avenue. The portion of the existing WWTP on the north side of the Bear River Levee, within the City of Wheatland, contains the treatment works, including an aeration basin, secondary clarifier, sludge drying beds and operations building. The infiltration basins (the disposal component of the plant) associated with the WWTP are located on the south side of the Bear River Levee, within unincorporated Sutter County, southwest of the WWTP.

The Wheatland WWTP was originally constructed in 1967, and last upgraded in 1990. The WWTP has a plant capacity of 0.62 mg per day (mgd) and is designed to treat wastewater at a secondary level, which is not consistent with the current State standards of tertiary treatment. Currently, the City generates average dry-weather flows (ADWF) of 0.35 mgd. In addition, the infiltration basins are subject to flood damage, as most recently realized in the winter of 2005 and 2006. The plant also suffers from a lack of redundancy, sludge drying bed constraints, and general repair needs. Accordingly, the City's current WWTP has reached the end of its useful life, which means the City will be facing substantial capital costs just to maintain its current capacity and meet water quality regulations.

Over the past 15 years, the City and several local agencies, including the Olivehurst Public Utility District (OPUD), Linda County Water District (LCWD), Beale Air Force Base (Beale), and the City of Lincoln, participated in several efforts exploring options for a regional wastewater conveyance, treatment, and disposal/reuse system for South Yuba County. The City of Wheatland commissioned a study in 2019 to evaluate all wastewater treatment operations and disposal alternatives. The study examined the feasibility of connecting to either OPUD, LCWD, Beale, or the City of Lincoln, and also considered expanding the City's existing WWTP or constructing a new City-owned WWTP before recommending a connection to either OPUD or LCWD facilities.

The City ultimately approved the Wheatland Regional Sewer Pipeline Project in March 2023 to establish a connection to OPUD facilities at Rancho Road and State Route (SR) 65 through installation of a new eight-mile pipeline alignment and construction of three sewer pump stations. The approved regional sewer pipeline will consist of pressurized force mains from the existing Malone Pump Station in the City of Wheatland to OPUD's point of connection. The pipe material will be high-density polyethylene (HDPE) pipe due to the advantages of HDPE, such as higher impact resistance, resistance to corrosion, flexibility, cost effectiveness, and fused joints. Sewer pipe sizes will include a 12-inch sewer force main from Pump Station 1 (Malone Avenue) to the intersection of Spenceville Road and Jasper Lane; and an 18-inch sewer force main from Pump Station 2 to the point of connection with OPUD's system near the intersection of Rancho Road and SR 65. The capacity of the sewer pipes and pump stations will be sized to accommodate existing and projected development within the City and the resulting flowrates (i.e., 1.5 mgd ADWF, and 3.3 mgd peak flow).

OPUD currently has a tertiary WWTP with a capacity to treat and dispose of 3.0 mgd. Approximately 1.5 mgd of capacity is available at OPUD's plant with the completion of necessary improvements to the conveyance system. A capacity of 1.5 mgd is equivalent to 5,500 EDUs, and thus, the available capacity is sufficient to serve the design flow from the approved regional sewer pipeline. The flows from the approved sewer pipeline in combination with future development within OPUD's service area would eventually require expansion of OPUD's WWTP. Future WWTP expansions and associated environmental review will be the responsibility of OPUD. OPUD's plant has the space (footprint) to eventually expand to 8.0 mgd.

Existing sewer conveyance facilities border the proposed project to the north, northeast, west, and south. A sewer force main flows through the western portion of the property to the City's existing WWTP located on the southern project site boundary.

Stormwater Drainage

The northeastern area within the existing City limits currently drains through the Wheatland Ranch subdivision into a detention basin constructed in 2002. The detention basin discharges into an existing ditch, outside the City limits to the northwest into Dry Creek. A flap valve closes when the water level is higher in Dry Creek than in the local discharge canal. The flap valve prevents the Dry Creek water from backflowing into areas south of the Dry Creek levee. When the flap valve is closed, local stormwater cannot be discharged into Dry Creek and can pond on the land side of the levee. The northwestern area within the existing City limits currently drains through a system of pipes, open ditches, and a major north draining channel that discharges into a detention basin.

The southeastern area within the existing City limits currently drains through a system of pipes and open ditches to a small 24-inch diameter concrete culvert that crosses to the west under the UPRR into the south fork of Grasshopper Slough. The pipe also drains a large area outside of the City limits. Periodically, flows are restricted, resulting in water ponding on the east side of the UPRR and north of the Bear River. The southwestern area within the existing City limits, which includes the project site, currently drains through a system of pipes and open ditches and discharges into the south fork of Grasshopper Slough.

As part of the City's General Plan, the Five Watershed Plan[7] was prepared and adopted, which divided the General Plan study area into five regional watersheds and established the overall drainage plan for future development of the City. The five regional watersheds include the North Shed, City Shed, West Shed, South Shed, and East Shed. The Five Watershed Plan requires a watershed plan be developed specifically for each watershed area such that each watershed could stand alone. The Five Watershed Plan proposed regional detention basins in each of the

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[7] Civil Engineering Solutions, Inc. *Wheatland General Plan Update Yuba County, CA, Drainage Report for Internal Drainage (Five Watershed Plan)*. November 2005.

five watersheds, which would then pump storm drainage directly to either Dry Creek or the Bear River to mitigate impacts to downstream drainage facilities on Grasshopper Slough. The project site is located within the South Shed of the Five Watershed Plan.

In accordance with the Five Watershed Plan, a watershed plan for the South Shed was prepared in 2006. Specifically, the Heritage Oaks Estates Drainage Area Master Drainage Plan was completed in June 2006 (2006 Master Drainage Plan) and covered the full development of Heritage Oaks Estates, full development of Blue Oaks Estates (also known as Roddan Ranch), the Jones Ranch Subdivision, and an additional 42 acres of land located west of the project site, which is now owned by the Bishop family. The 2006 Master Drainage Plan included a regional detention pond, regional storm drainage pump station, and outfall pipes. An area in the northern portion of the project site, east of Malone Avenue, was predominantly excavated for a drainage basin, consistent with the 2006 Master Drainage Plan, as part of the mass grading of the site that occurred in 2006.

Solid Waste

Solid waste collection services for City residents is provided by Recology Yuba-Sutter, formerly Yuba-Sutter Disposal, Inc. (YSDI). Recology Yuba-Sutter has a franchise agreement with the City to collect residential and commercial refuse, and dispose of the refuse at the Ostrom Road Sanitary Landfill at 5900 Ostrom Road. The Ostrom Road Sanitary Landfill currently encompasses an area of approximately 261 acres, with 225 acres available for disposal.

Pursuant to the California Department of Resources Recycling and Recovery (CalRecycle), the Ostrom Road Sanitary Landfill is permitted to accept a maximum of 43,467,231 cubic yards of waste.[8] The landfill has a remaining capacity of 39,223,000 cubic yards and is anticipated to cease operations by 2066. The site's permit allows the landfill to receive a maximum of 3,000 tons of waste per day.

Gas, Electric, and Telecommunication Infrastructure

Pacific Gas and Electric Co. (PG&E) is the primary service provider in Yuba County for natural gas and electricity. Based in San Francisco, PG&E is the largest provider of gas and electric services in Northern and Central California. PG&E provides electricity to roughly 5.1 million customers and provides natural gas to nearly 4.2 million customers. A mix of generating sources, including hydropower, gas-fired steam, and nuclear energy, powers the electric system. Telecommunications infrastructure in the area is provided by Xfinity. Existing aboveground electricity power lines and utility poles and telecommunications lines are located to the north of the project site, along Main Street and Malone Avenue.

4.5.3 REGULATORY CONTEXT

The following discussion contains a summary of regulatory controls pertaining to utilities and service systems, including federal, State, and local laws and ordinances.

Federal Regulations

The following are applicable State regulations associated with utilities and service systems related to the proposed project.

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[8] California Department of Resources Recycling and Recovery. *SWIS Facility/Site Activity Details Recology Ostrom Road LF Inc. (58-AA-0011)*. Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/733?siteID=4075. Accessed May 2024.

Federal Clean Water Act

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the federal Clean Water Act (CWA) to regulate municipal and industrial discharges to surface waters of the U.S. Each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge.

The NPDES Municipal Stormwater Permitting Program regulates stormwater discharges from separate storm sewer systems. NPDES Municipal Stormwater Permits are issued in two phases. Phase I regulates stormwater discharges from large- and medium-sized municipal separate storm sewer systems (MS4) (those serving more than 100,000 persons). Most Phase I permits are issued to a group of co-permittees encompassing an entire metropolitan area. Phase II provides coverage for smaller municipalities, including nontraditional small storm sewer systems, which include governmental facilities such as military bases, public campuses, and prison and hospital complexes. The NPDES Municipal Stormwater Permits require the discharger to develop and implement a Stormwater Management Plan/Program with the goal of reducing the discharge of pollutants to the maximum extent practicable.

The Central Valley Regional Water Quality Control Board (RWQCB) issued the NPDES General Permit No. CAS000004 Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems, which became effective on July 1, 2013. An “MS4” is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) designed or used for collecting or conveying stormwater; (ii) which is not a combined sewer; and (iii) which is not part of a Publicly Owned Treatment Works (POTW). The City of Wheatland is a permittee under an Unregulated Small Traditional MS4, as required by the following criteria:

- The City is located outside of Urbanized Areas serving a population of less than 10,000 people;
- The City is located outside of Urbanized Areas serving a population of less 1,000 people per square mile; and/or
- The City is not identified as a Regulated Small MS4 by the State Water Resources Control Board (SWRCB).

As a result, the City is not required to obtain a MS4 permit for operation of the municipal storm sewer system.

State Regulations

The following are applicable State regulations associated with utilities and service systems related to the proposed project.

California Green Building Standards Code

The 2022 California Green Building Standards Code, otherwise known as the CALGreen Code (California Code of Regulations [CCR] Title 24, Part 11) is a portion of the California Building Standards Code (CBSC), which became effective on January 1, 2023. The CBSC is adopted every three years by the Building Standards Commission (BSC).

The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The CALGreen Code standards regulate the method of use, properties, performance, types of materials used in construction, alteration repair, improvement and rehabilitation of a structure or improvement to property. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the current CALGreen Code include, but are not limited to, the following measures:

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings;
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or DWR's Model Water Efficient Landscape Ordinance (MWELO);
- 65 percent of construction and demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency;
- Inclusion of electric vehicle (EV) charging stations or designated spaces capable of supporting future charging stations; and
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen Code standards also include voluntary efficiency measures that are provided at two tiers and implemented at the discretion of local agencies and applicants. According to Section A4.602 of Appendix A4 of the CALGreen Code, CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements, stricter water conservation, 65 percent diversion of construction and demolition waste, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 80 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs. The City of Wheatland has not adopted CALGreen's Tier 1 or Tier 2 standards.

California Water Code

The California Water Code requires coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted and that planned water supplies are adequate to meet both existing demands and the demands of planned development.

Water Code Sections 10910 to 10915 (inclusive), sometimes referred to as Senate Bill (SB) 610, require land use lead agencies: 1) to identify the responsible public water purveyor for a proposed development project, and 2) to request from the responsible purveyor, a "Water Supply Assessment." The purposes of the WSA are (a) to describe the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed development project, while still meeting the current and projected water demands of customers, and (b) in the absence of a currently sufficient supply to describe the purveyor's plans for acquiring additional water. Water Code Sections 10910 to 10915 delineate the specific information that must be included in the WSA.

According to CEQA Guidelines Section 15155, a “water-demand project” means:

A. A residential development of more than 500 dwelling units.
B. A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
C. A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
D. A hotel or motel, or both, having more than 500 rooms.
E. An industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.
F. A mixed-use project that includes one or more of the projects specified in subdivisions (a)(1)(A), (a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(1)(E), and (a)(1)(G) of this section.
G. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.
H. For public water systems with fewer than 5,000 service connections, a project that meets the following criteria:

    1. A proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of a public water system's existing service connections; or
    2. A mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

The proposed project would include construction of up to 685 single-family residences. Therefore, the project meets criterion A.

Assembly Bill 1327

Assembly Bill (AB) 1327, the Solid Waste Reuse and Recycling Access Act of 1991, requires jurisdictions to adopt ordinances requiring development projects to provide adequate storage area for collection and removal of recyclable materials. The City of Wheatland has adopted such an ordinance (Wheatland Municipal Code Chapter 8.14).

Assembly Bill 1881

AB 1881, the Water Conservation in Landscaping Act of 2006 required the DWR to update the MWELO. Furthermore, AB 1881 required local agencies to adopt the updated model ordinance or an equivalent ordinance by January 1, 2010. If local jurisdictions failed to adopt the updated model ordinance or an equivalent by January 1, 2010, the DWR’s updated model ordinance would automatically be adopted by statute. The City of Wheatland has adopted such an ordinance (Wheatland Municipal Code Section 13.54.100).

Senate Bill 1016

Enacted in 2007, SB 1016 amended portions of the California Integrated Waste Management Act, allowing the California Integrated Waste Management Board (CIWMB) to use per capita disposal as an indicator in evaluating compliance with the requirements of AB 939. Jurisdictions track and report their per capita disposal rates to CalRecycle.

Data is not available through CalRecycle’s jurisdiction disposal records for the City of Wheatland. However, according to CalRecycle, the Yuba/Sutter Regional Waste Management Authority disposed of 173,456.14 tons in 2022.[9] The Yuba/Sutter Regional Waste Management Authority's population waste disposal rate was 5.2 pounds per day (lbs/day); the population disposal rate target for residents according to CalRecycle was 6.9 lbs/day. The waste disposal rate for employees in 2022 was 18.1 lbs/day; the CalRecycle disposal rate target was 24.9 lbs/day.

California Integrated Waste Management Act – Assembly Bill 939

AB 939, the California Integrated Waste Management Act of 1989, contains requirements affecting solid waste disposal in California. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. Solid waste plans are required to explain how each city's AB 939 plan will be integrated within the respective county plan. The plans must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal. Cities and counties that do not meet this mandate are subject to $10,000-per-day fines.

Local Regulations

The following are applicable local utility and service system regulations related to the proposed project.

City of Wheatland General Plan

The following goals, objectives, and policies from the adopted City of Wheatland General Plan related to utilities and service systems are applicable to the proposed project.

Goal 5.A To ensure the timely development of public facilities and services, the maintenance of specified service levels for public facilities, and that adopted facility and service standards are achieved and maintained through the use of equitable funding methods.

Policy 5.A.1 Where new development requires the construction of new public facilities, new development shall fund its fair share of the construction of those facilities.

Policy 5.A.2 The City shall ensure through the development review process that adequate public facilities and services are available to serve new development. The City shall not approve new development where existing facilities are inadequate unless the following conditions are met:

a. The applicant can demonstrate that all necessary public facilities will be installed or adequately financed (through fees or other means); and
b. The facility improvements are consistent with applicable master or facility plans adopted by the City.

Policy 5.A.3 The City shall require development proposals to include plans for development and financing of public facilities and services.

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[9] California Department of Resources Recycling and Recovery. *Jurisdiction Diversion/Disposal Rate Detail*. Available at: https://calrecycle.ca.gov/lgcentral/datatools/reports/divdisprtsum/. Accessed June 2024.

Policy 5.A.8 The City shall ensure through the development review process that public facilities and infrastructure are designed and constructed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing.

Policy 5.A.9 The City shall ensure through the development review process that public facilities and infrastructure are designed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing. For facilities subject to incremental sizing, the initial design shall include adequate land area and any other elements not easily expanded in the future.

Policy 5.A.10 The City shall require that new development pay its fair share of the cost of providing new public services and/or the costs of upgrading of all existing facilities it uses, based on the demand for these facilities attributable to the new development.

Goal 5.C To ensure a safe and reliable water supply sufficient to meet the future needs of the City.

Policy 5.C.1 The City shall protect the groundwater basin from overdraft from City use of groundwater. To this end, the City shall study, working closely with other public and private entities as deemed appropriate, the safe yield of the groundwater basin. Water management programs such as conjunctive use and recharge programs will also be considered. The City shall use this information to determine the most appropriate long-term water supply to serve Wheatland.

Policy 5.C.2 If the results of studies undertaken pursuant to Policy 5.C.1 indicate an imbalance between safe groundwater yield and projected water requirements, the City shall develop a response plan to address the imbalance. This response plan will include an appropriate mix of water conservation measures, reuse, surface water supplements, and other water management techniques.

Policy 5.C.3 The City shall promote efficient water use and reduced water demand by:

a. Requiring water-conserving building design and equipment in new construction;
b. Encouraging water-conserving landscaping and other conservation measures; and
c. Encouraging retrofitting of existing development with water-conserving devices.

Policy 5.C.5 The City shall only approve new development that relies on an adequate City water supply and delivery system.

Policy 5.C.9 The City shall ensure that water supply capacity and infrastructure are in place prior to granting building permits for new development.

Policy 5.C.10 The City shall ensure through the development review process that public facilities and infrastructure are designed to meet ultimate capacity needs, pursuant to a master plan, to avoid the need for future replacement to achieve upsizing.

Policy 5.C.11 The City shall ensure adequate water pressure throughout the urban area for fire protection purposes.

Goal 5.D To ensure adequate wastewater collection and treatment and the safe disposal of effluent.

Policy 5.D.2. The City shall require all sewage generators within its service area to connect to the City's system.

Policy 5.D.3. The City shall require that collection systems be designed on a gravity-flow basis except where a site-specific engineering analysis clearly demonstrates the long-term cost-effectiveness or need for pumping facilities.

Goal 5.E To collect and dispose of stormwater in a manner that protects the city's residents and property from the hazards of flooding, manages stormwater in a manner that is safe and environmentally sensitive, and enhances the environment.

Policy 5.E.2 The City shall encourage project designs that minimize drainage concentrations and impervious coverage.

Policy 5.E.3 The City shall prohibit grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of storm drainage facilities.

Policy 5.E.4 The City shall require new development projects to prepare an erosion control plan.

Policy 5.E.5 The City shall require projects that have significant impacts on the quantity and quality of surface water runoff to incorporate mitigation measures for impacts related to urban runoff.

Policy 5.E.6 Future drainage system requirements shall comply with applicable State and Federal pollutant discharge requirements.

Policy 5.E.7 The City shall encourage stormwater detention facilities to be designed for multiple purposes, including recreational (e.g., parks, ball fields, etc.) and/or stormwater quality improvement.

Policy 5.E.9 The City shall require detention storage with measured release to ensure that the capacity of downstream creeks and sloughs will not be exceeded. To ensure downstream capacity is not exceeded, the following measures will be applied:

a. Outflow to creeks and sloughs shall be monitored and controlled to avoid exceeding downstream channel capacities; and
b. Storage facilities shall be coordinated and managed to prevent problems caused by timing of storage outflows.

Policy 5.E.10 The City shall require the preparation of watershed drainage plans for proposed developments. These plans shall define needed drainage improvements and estimate construction costs for these improvements.

Goal 5.F. To ensure the safe and efficient disposal or recycling or solid waste generated in Wheatland.

Policy 5.F.1 The City shall require waste collection in all new developments.

Policy 5.F.4 The City shall encourage recycling in public and private operations to reduce demand for solid waste disposal capacity.

Policy 5.F.7 The City shall require the recycling of construction debris.

Policy 5.F.8 The City shall ensure that all new development has appropriate provisions for solid waste storage, handling, and collection pickup.

Goal 5.I To promote adequate levels of utility services provided by private companies and to ensure that these are constructed in a fashion that minimize their negative effects on surrounding development.

Policy 5.I.2 The City shall require underground installation of electrical distribution utility lines in new developments and areas that are redeveloped, except where infeasible for operational reasons.

City of Wheatland Municipal Code

The following sections of the adopted Wheatland Municipal Code related to utilities and service systems are applicable to the proposed project.

Section 13.54.100: Water-Efficient Landscaping

Wheatland Municipal Code Section 13.54.100 establishes that certain landscaping projects are required to comply with the water-efficiency provisions of Section 18.60130(E) of the Municipal Code, which sets forth the City's MWELO. Pursuant to the City's MWELO, property owners or their building or landscape designers, including anyone requiring a building or planning permit, plan check, or landscape design review from the City, who are constructing a new (single-family, multi-family, public, institutional, or commercial) project with a landscape area greater than 500 square feet (sf), or rehabilitating an existing landscape with a total landscape area greater than 2,500 sf must comply with the provisions of the City's MWELO.

Chapter 15.14: California Green Building Code

Chapter 15.14 of the City's Municipal Code adopts by reference the CALGreen Code (Part 11 of Title 24 of the CCR) and Appendices A4 and A5 to the Code, as published by the International Code Council.

Section 17.08.370: Improvements – Utilities

Section 17.08.370 of the City's Municipal Code requires all utilities to be placed underground, in accordance with the requirements of the utility concerned, in either City street easements or appropriate utility easements.

4.5.4 IMPACTS AND MITIGATION MEASURES

The section below describes the standards of significance and methodology utilized to analyze and determine the proposed project's potential project-specific impacts related to utilities and service systems. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact related to utilities and service systems would occur if the proposed project would result in any of the following:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals;
- Comply with federal, State, and local management and reduction statutes and regulations related to solid waste; and/or
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would either:
    - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

It should be noted that all other impacts related to hydrology and water quality, including water quality, groundwater supplies, recharge, and flooding, are addressed in Chapter 4.6, Other Effects, of this EIR.

Method of Analysis

In order to determine the potential for the proposed project to result in substantial adverse impacts associated with the provision of utilities and service systems, relevant planning documents were reviewed, including, but not limited to, the City's General Plan and associated General Plan EIR.

In addition, information related to water supply and conveyance was primarily drawn from the WSA prepared for the proposed project by LSCE (see Appendix F of this EIR). Information related to the proposed sanitary sewer system was primarily drawn from the Sewer System Master Plan prepared by MHM, Inc. (see Appendix G of this EIR). Information related to drainage was primarily drawn from the Interim Drainage Plan prepared for the proposed project by MHM Inc. (see Appendix H of this EIR). The methods of analysis used in each of the foregoing technical assessments are discussed further below.

Water Supply Assessment

The WSA employed the Disaggregate Method to estimate water requirements related to the projected increase in water demands over time. In the Disaggregate Method, historical water metering records are subdivided, or disaggregated, into various land uses, including residential, commercial/institutional, irrigation, and other. Based on disaggregated water use associated with each land use, unitized water consumptions are determined for each year of record, which is used to develop a base water use for each land use (e.g., gpd per residential service connection, commercial connection, and irrigation connection). Once a unitized water consumption is determined per connection of each land use, the service connections can be represented as an EDU. The size of the water system is expressed as a total EDU for the existing system and at build out.

The methodology used by the WSA to determine the water use factors, daily water demand and peaking factors, and source capacity requirements is discussed further below.

Water Use Factors

The proposed project includes residential and landscape irrigation uses, which are the same customer types as the City's records prior to 2020. As previously discussed, data collected by the City included negative water losses in 2018 and 2019. As such, the WSA considered the 2017 data suitable for estimating water use factors. In addition, an allowance is included for water losses so that the water usage associated with each connection reflects the total water requirements. The historical data had 20 to 35 percent of production as water loss, due to old mechanical meters and missed capturing data. According to the City, the water loss dropped to 10 percent in the recent couple of months. Because the proposed project would include new meters and pipelines, a water loss of 10 percent was used for the projected factors to account for variations that occur during operations.

The WSA used the EDU water consumption rates described in the Existing Environmental Setting above. As discussed therein, one EDU is estimated to require on average approximately 0.27 gpm, 393 gpd, 11,786 gallons per month, and 143,392 gpy.

Daily Water Demand and Peaking Factors

A review of meter data and service connection data from 2009 through 2022 was used to estimate water use factors for each of the land uses. Annual consumption for each type of connection is presented as an average flow rate (gpm) and divided by the total connections to determine the usage per service connection (gpm/sc) and water use in mgy for each land use. The Average Day Demand (ADD), Maximum Day Demand (MDD), and Peak Hour Demand (PHD) factors were each considered within the WSA related to design capacity and sizing of the proposed water system. Each water use factor is discussed in further detail below.

Average and Maximum Day Demands

The ADD was determined by dividing the annual water requirements by 365 days. The current annual water requirement in the system is 212 mgy, which equates to an ADD of 0.58 mgd, or an average flow of 403 gpm.

In accordance with the California Waterworks Standards (Title 22, Chapter 16 of the CCR), a public water system must determine the MDD using the most recent 10 years of daily production records, if available. Where daily production data is unavailable, the MDD can be determined using the maximum month of production over the most recent 10 years of operation and multiplying the ADD in that month by a factor of 1.5 times. Table 4.5-2 summarizes the historic production since 2012 as calculated using the maximum month multiplied rate.

As shown in Table 4.5-2, the maximum month results in an MDD of 2.6 mgd, or an average flow of 1,799 gpm. In addition, the ratio of the MDD to ADD was used for projecting future demands based on future ADD estimates. From the current MDD of 2.6 mgd and the current ADD of 0.58 mgd, the MDD peaking factor is 4.46.

Table 4.5-2
Maximum Production 10-Year Dataset (2012 – 2022)

Year	Maximum Month Production (mg)	MDD Using Title 22 (mgd)	Month
2012	54.1	2.6	August
2013	40.2	1.9	July
2014	33.2	1.6	July
2015	23.3	1.1	July
2016*	-	-	-
2017	35.9	1.7	July
2018	37.9	1.8	June
2019	37.7	1.8	July
2020	33.2	1.6	July
2021	34.2	1.7	June
2022	53.5	2.6	July
Maximum	**54.1**	**2.6**	**-**

* Production data from July to December 2016 were missing.

Source: Luhdorff and Scalmanini, 2023.

Peak Hour Demand

The PHD is the peak flow rate that occurs over a period of several hours on the day of maximum water use. Various factors specific to each system affect the PHD, including irrigation timers and residential use patterns, which can be measured and represented by a system's diurnal curve if hourly data is available. In the absence of that information, Title 22 permits the use of a factor of 1.5 multiplied by the MDD.

Diurnal curves were not evaluated within the WSA. Instead, the PHD of 2,698 gpm was calculated by multiplying 1.5 times the MDD of 1,799 gpm. The ratio of PHD to ADD (or the PHD peaking factor) is 6.70.

Fire Demand

Water requirements for fire suppression are derived from the governing fire flows of the system, set forth by the California Fire Code, Part 9, Appendix B – Fire Flow Requirements for Buildings, which establishes fire flow and duration requirements based on structure sizes and types. According to the WSA, the minimum fire flow standards adopted for the proposed water system are specific to a residential or commercial fire. For a residential structure, the fire flow standard is 1,500 gpm for two hours. For larger public buildings and commercial complexes, the fire flow standard is 3,000 gpm for three hours. However, pursuant to the City's General Plan and fire storage sizing policies, a commercial fire is defined as 3,500 gpm for three hours. As such, the City's standard provides the more conservative approach, and was used in the WSA. In addition, minimum residual pressure must be 20 psi at all locations during a fire flow event.

The residential and commercial fire requirements combined with the MDD are summarized in Table 4.5-3 below for the City and the proposed project. The MDD plus fire flow demand of 6,212 gpm is higher than the PHD of 4,067 gpm, and, therefore, governs the sizing for distribution system hydraulic analysis.

Table 4.5-3
MDD Plus Fire Flow (gpm)

Category	Fire Flow	MDD plus Fire Flow
Residential Fire (1,500 gpm for two hours)	1,500	4,212
Commercial Fire (3,500 gpm for three hours)	3,500	6,212

Source: Luhdorff and Scalmanini, 2023.

Source Capacity Requirements

Source capacity is the total amount of water available from water sources including groundwater wells, storage tanks, and booster pumps at the time at which the MDD occurs, which typically occurs in the summer when well capacities are lower due to lower groundwater levels. Section 64554 of CCR Title 22, Chapter 16 states: "At all times, a public water system's water source(s) shall have the capacity to meet the system's MDD." Pursuant to CCR Title 22, systems with 1,000 or more service connections must be able to meet four hours of PHD with source capacity, storage capacity, and/or emergency connections. If a system is unable to meet the total PHD, a portion of the PHD would have to be met with storage. Storage capacity is sized for the instantaneous peak flows (operational storage), fire safety, emergency, and unusable storage volumes. The Title 22 requirements for each volume are described below.

Operational storage tanks are sized to meet four hours of PHD, and storage volume depends on the supply from well capacity. As discussed above, the City has a total source supply of 2,720 gpm with the largest well offline. Operational storage was calculated with the following equation:

(PHD [gpm] – Source Capacity [gpm]) x 4 hours.

Fire Storage

Fire flows within the distribution system are sized for the suppression of residential or commercial fires, whichever is larger. Based on the Title 22 requirements discussed above, enough volume to produce a commercial fire flow of 3,500 gpm for a three-hour duration must be held in storage, or 0.63 mg (3,500 gpm x 3 hours).

Emergency Storage

Emergency storage is the volume held for periods where interruptions in water supplies from the wells occur. According to the WSA, industry practice is to maintain an emergency volume equal to the MDD, in order to protect against prolonged power outages. Alternatively, water supply facilities can be equipped with standby emergency generators to ensure uninterrupted power supply to the water distribution system. Pursuant to the WSA, Wells 3, 5, 7, and 8 have backup power; however, Well 7 is currently offline. With the largest well (Well 8) offline, Wells 3 and 5 would provide 1,420 gpm during a power outage. The available emergency capacity was calculated with the same equation for operational storage, shown above.

Unusable Storage

Unusable storage is the volume of water that is not available from a nominal tank volume due to inlet and outlet pipe configurations. The unusable volume is assumed to be five percent of the nominal volume of the storage tanks on-site. Currently, the City has two storage tanks with a total capacity of 0.73 mg. Therefore, the unusable storage capacity is 0.04 mg (0.73 mg x 0.05).

Booster Pump Capacity

Booster pump capacity is sized to meet the instantaneous water demand of the water system and is defined as being the larger of either the PHD or the MDD plus fire flow. The City's Wells 4 through 8 pump directly into the distribution system and have a total capacity of 2,820 gpm. Tank 2, which receives water from Well 3, has three booster pumps to supply a total of 1,700 gpm to the distribution system and one booster pump to supply 2,000 gpm for fire flow. Elevated Tank 1 provides constant system pressure to the distribution system, and the water level controls the Tank 2 booster pumps, which control all the wells. Tank 1 is filled from the distribution system while the booster pumps are on. Overall, the total booster capacity was calculated to be 6,520 gpm.

Sewer System Master Plan

The proposed project's sewer flow rate demand used in this analysis is from the Sewer System Master Plan, which is an overall high-level infrastructure analysis for the greater project area, including the existing Malone Sewer Pump Station Service Area, Heritage Oaks West, Caliterra Ranch, and the proposed project. The sewer flow rate demand calculations used in the Sewer System Master Plan for the proposed project are based on the land use type, average density, the Biochemical Oxygen Demand of 310 milligrams per liter (mg/L), the Suspended Solids Content of 240 mg/L, and an average household size of 3.00 people per dwelling unit for a typical low-density residential unit.

Interim Drainage Plan

Two software tools were used in the Interim Drainage Plan: the Hydrologic Engineering Center's Hydrologic Modeling System (HEC-HMS) (Version 4.10) and the Storm Water Management Model (SWMM) (Version 5.2) by the USEPA. It should be noted that while the 2006 Master Drainage Plan used rainfall values from the historic Wheatland 2NE gage, the Interim Drainage Plan prepared for the proposed project uses precipitation data reported in the National Oceanic and Atmospheric Administration's (NOAA) Atlas 14 precipitation frequency estimates. The NOAA precipitation data is significantly higher than that recorded by the City, resulting in a higher quantity of storm runoff and a more conservative analysis.

The USEPA's SWMM hydrologic model included subbasins and a rainfall timeseries based on the U.S. Soil Conservation Service (SCS) Type-1 storm, which generally represents storms within the Sacramento Valley. The hydraulic model included the east and west trunk lines, major storm drain junction manholes, both detention basins, and the outfall structures for the detention basin system. Future improvements were included in the model, but were removed from the simulation where appropriate. The SWMM estimated peak flows within the trunk lines, peak stages in the detention basins, and outflows from the detention basins to Grasshopper Slough through a continuous simulation of precipitation, runoff, and the subsequent hydraulic routing within the proposed drainage system.

In most jurisdictions, the standard is to mitigated peak flows through all storm events up to a 100-year, 24-hour storm between pre- and post-development conditions. During such larger storm events, the soil is saturated to the point that all of the stormwater runoff volume ends up flowing off the property and going downstream. The Interim Drainage Plan uses the 100-year, 10-day storm to conservatively determine the appropriate detention basin sizing needed to accommodate the proposed project without the need for the regional storm drainage pump station anticipated in the 2006 Master Drainage Plan. The 100-year, 10-day storm is the series of storms that usually result in the largest volume and the greatest flooding compared to the 24-hour storms.

Project-Specific Impacts and Mitigation Measures

The following discussion of impacts is based on the implementation of the proposed project in comparison with the standards of significance identified above.

4.5-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Based on the analysis below, the impact is *less than significant*.

Impacts related to water, wastewater treatment, electric power, natural gas, and telecommunications facilities associated with the proposed project are discussed separately below. For impacts related to stormwater drainage facilities, see Impact 4.5-5 below.

Water Supply Infrastructure

Water service would be provided to the proposed project through the existing well located in the site's 0.86-acre Parcel B, as well as through new connections to existing water supply lines in the project vicinity. From the point of connection, new water lines would be extended into the project site within the project's new internal street network, to which the proposed residences would connect by way of new water laterals. In addition, as discussed further under Impact 4.5-2, the proposed project would include a well pump station and storage tank in Parcel B, located immediately north of North Park Drive and west of Lot 1.

Installation of the new water lines and hydrants would occur in existing road rights-of-way (ROWs) or in the proposed internal street network, while the new well pump station and storage tank would be installed on Parcel B, which was previously disturbed as part of mass grading of the site in 2006. All potential physical environmental impacts that could result from development of the proposed project, including the new water infrastructure improvements, have been evaluated throughout the technical chapters of this EIR. In addition, the new water infrastructure would be designed and constructed in accordance with the applicable standards set forth in the City of Wheatland Public Works Construction Standards, ensuring the new water lines are constructed in conformance with proper materials and sizing. All necessary water conveyance infrastructure for the proposed project would be financed by the project applicant.

Based on the above, the proposed project would not require the construction of new or expanded water facilities, the construction of which could cause significant environmental effects, and a less-than-significant impact could occur.

Wastewater Conveyance Infrastructure

The proposed project would include new connections to existing sewer infrastructure either in existing road ROWs or within areas proposed for disturbance as part of the proposed internal roadway network. New service laterals would then be installed to each proposed lot. As previously discussed, all potential physical environmental impacts that could result from the proposed project have been evaluated throughout the technical chapters of this EIR. In addition, the new sewer infrastructure would be designed and constructed in accordance with the applicable standards set forth in the City of Wheatland Public Works Construction Standards, ensuring the new sewer lines are constructed in conformance with proper materials and sizing. All necessary sewer conveyance infrastructure for the proposed project would be financed by the project applicant. Furthermore, based on the analysis provided under Impact 4.7-3 below, adequate capacity exists for the wastewater treatment facilities to serve the proposed project.

Based on the above, the proposed project would not require or result in the relocation or construction of new or expanded sewer facilities, the construction or relocation of which could cause significant environmental effects, and a less-than-significant impact would occur.

Electricity, Natural Gas, and Telecommunications Infrastructure

The proposed project would include new connections to existing electrical, natural gas, and telecommunications infrastructure located in the project vicinity. Installation of the new infrastructure would occur either in areas that have been previously disturbed during the 2006 grading activities, or in areas proposed for disturbance as part of development of the proposed project. Consistent with the provisions set forth in Wheatland Municipal Code Section 17.08.370, all utilities infrastructure would be installed underground. Additionally, pursuant to Municipal Code Sections 17.08.430, all required infrastructure improvements would be subject to review and approval by the City Engineer.

Based on the above, the proposed project would not require or result in the relocation or construction of new or expanded electricity, natural gas, and telecommunications facilities, the construction or relocation of which could cause significant environmental effects, and a less-than-significant impact would occur.

Conclusion

Based on the above, the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater, electricity, natural gas, and telecommunications facilities, the construction or relocation of which could cause significant environmental effects, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.5-2 Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Based on the analysis below, the impact is *less than significant*.

Pursuant to the WSA, the City's total source capacity with Well 7 offline is 3,570 gpm. The WSA prepared for the proposed project included an assessment of the source capacity available to serve the existing water connections in the City of Wheatland, as well as the proposed project. Source capacity is the total amount of water available from water sources, including the City's groundwater wells, storage tanks, and booster pumps. Pursuant to Section 64554 of CCR Title 22, Chapter 16, a public water system's water sources must have the capacity to meet the system's MDD at all times. For water systems using only groundwater, such as the City of Wheatland, the system must be capable of meeting MDD with the highest-capacity source offline.

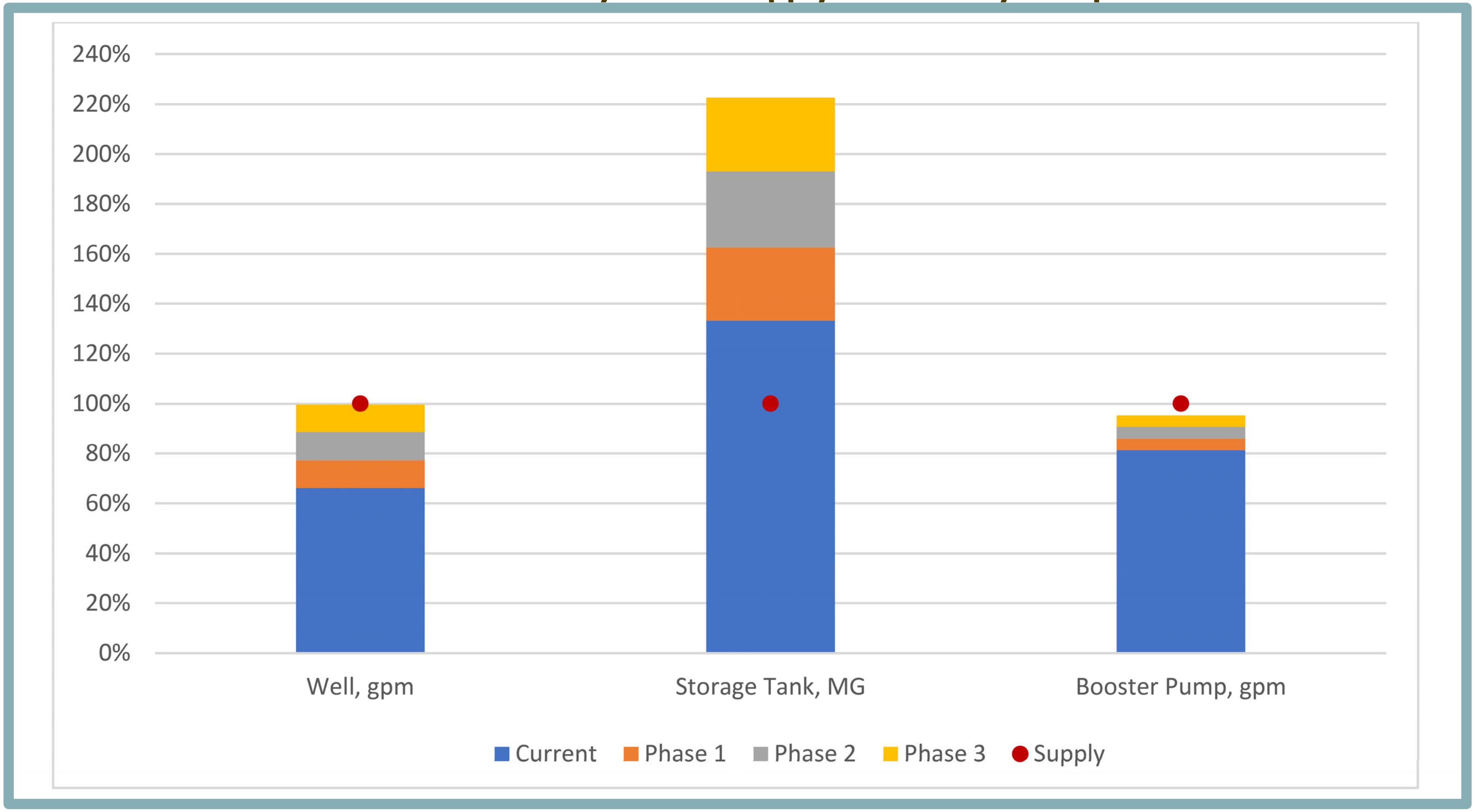
Using the methodology discussed in the Method of Analysis section, the WSA found that with the largest well offline (Well 8), the total source capacity in the City of Wheatland is 2,720 gpm. The combined MDD generated by the City's existing water users and the proposed project would be 2,712 gpm (see Figure 4.5-4). Therefore, the City would have sufficient source capacity to accommodate the proposed project

With respect to storage capacity, the City has two storage tanks with a total capacity of 0.73 mg. As previously discussed, Well 7 is offline due to water quality issues, and Well 3, 5, and 8 are equipped with backup generators. With the largest well (Well 8) offline, the City's existing water system in combination with the proposed project would require a total storage capacity of 1.63 mg.

The City's existing storage facilities would have a deficit of approximately 0.9 mg, and additional water storage would be needed to meet the storage requirements established by CCR Title 22. However, as previously discussed, the proposed project would include a water storage tank in the site's 0.86-acre Parcel B, which would provide the necessary storage capacity to accommodate the demands generated by the proposed project.

As part of project approval, the project would be required to obtain a domestic water supply permit from the Yuba County Environmental Health Department (YCEHD) for the installation of the new water storage tank, demonstrating proper compliance with the applicable regulations established by YCEHD related to water tank design.

Figure 4.5-4
Water Demand to City Water Supply Availability Comparison



Source: Luhdorff and Scalmanini, 2023.

Thus, through project approval, the City would have sufficient capacity to accommodate water storage demands generated by the City's existing water connections in combination with the proposed project.

With respect to booster capacity, the WSA determined that the City's total existing booster capacity is 6,520 gpm, including the pressure tanks in Well 4 through 8 and the booster pumps for Tank 2, which is sufficient for the MDD plus fire flow of 6,212 gpm that would be necessary to accommodate the City's existing water connections in combination with the proposed project.

Based on the above, the City would have sufficient water supplies available to serve buildout of the proposed project and reasonably foreseeable future development, and a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.5-3 Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. Based on the analysis below, the impact is *less than significant*.

As previously discussed, the WWTP has a permitted capacity of 0.62 mgd ADWF, and currently treats an ADWF of 0.35 mgd. Using the methodology discussed above in the Method of Analysis section, the Sewer System Master Plan determined that the proposed project would result in ADWF flows of 171,250 gpd, or 0.17 mgd. Such an amount could be accommodated by the WWTP's existing capacity, as the existing flows in combination with the proposed project would total 0.52 mgd, which would be beneath the existing capacity of 0.62 mgd of the City's existing WWTP.

In addition, the City has confirmed that the existing WWTP maintains sufficient treatment capacity to accommodate flows from the proposed project and the associated maximum of 685 residences.[10] Furthermore, the proposed project would be subject to the City's wastewater collection and treatment development impact fee, established by Wheatland Municipal Code Section 3.26.030. The purpose of the fee is to facilitate the improvements described in the City's Master Facilities Plan. Funds generated by the development impact fee would be used to ensure the project pays a fair share towards any expansions to the wastewater system deemed necessary by the City.

Based on the above, the proposed project would not result in a determination by the wastewater treatment provider serving the project that it does not have adequate wastewater treatment capacity to serve the project's projected demand in addition to

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[10] Schilling, Dane H., City Engineer, City of Wheatland. Personal Communication [email] with Angela DaRosa, Division Manager/Air Quality Specialist, Raney Planning & Management, Inc. May 30, 2024.

the provider's existing commitments. Therefore, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.5-4 Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or conflict with federal, State, and local management and reduction statutes and regulations related to solid waste. Based on the analysis below, the impact is *less than significant*.

As previously discussed, solid waste from the City is disposed of at the Ostrom Road Sanitary Landfill, located at 5900 Ostrom Road. The Ostrom Road Sanitary Landfill currently encompasses an area of approximately 261 acres, with 225 acres available for disposal. According to CalRecycle, the Ostrom Road Sanitary Landfill is permitted to accept a maximum of 43,467,231 cubic yards of waste.[11] The landfill has a remaining capacity of 39,223,000 cubic yards, or approximately 90 percent of the total capacity, and is anticipated to cease operations by 2066.

According to the USEPA report, Estimating 2003 Building-Related Construction and Demolition Materials Amounts, residential construction activities generate an average of 4.39 pounds per square foot (lbs/sf) of waste.[12] The proposed project would include construction of up to 685 dwelling units; however, the total building square footage of the future units is currently unknown. Therefore, for analysis purposes, each unit was conservatively estimated to include 2,500 sf of building space. As such, the proposed project would result in a total buildout square footage of 1,712,500 sf, the construction of which would produce approximately 7,517,875 lbs (3,758.9 tons) of construction waste (4.39 lbs/sf X 1,712,500 sf).

The construction waste estimate presented above represents a conservative analysis of the maximum potential waste production from construction of the proposed project. The CALGreen Code requires at least 65 percent diversion of construction waste for projects permitted after January 1, 2017. As such, a minimum of 2,443.3 tons of waste would be diverted away from landfill disposal during construction. Considering the applicable CALGreen Code requirements, buildout of the proposed project would be anticipated to produce up to 1,315.6 tons of waste during construction. Construction waste generation represents a short-term increase in waste generation. Considering that the Ostrom Road Sanitary Landfill has a remaining capacity of 90 percent of the total permitted capacity of the landfill, the proposed project's construction waste would represent only an incremental contribution to the waste received at the landfill.

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[11] California Department of Resources Recycling and Recovery. *SWIS Facility/Site Activity Details Recology Ostrom Road LF Inc. (58-AA-0011)*. Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/733?siteID=4075. Accessed May 2024.

[12] U.S. Environmental Protection Agency. *Estimating 2003 Building-Related Construction and Demolition Materials Amounts.* 2009.

With respect to operations, the proposed project has been estimated to generate approximately 1,644 new residents, based on the City of Wheatland's average 2.4 persons per household established in the City's General Plan. Solid waste generation from the proposed project has been estimated based on an average waste generation rate for residential uses, as published by CalRecycle.[13] The total number of residents would produce approximately 20,106 lbs/day (10.1 tons/day) of operational solid waste. Considering that the Ostrom Road Sanitary Landfill has a remaining capacity of 90 percent and a maximum permitted throughput of 3,000 tons per day, the proposed project's operational waste would represent only an incremental contribution to the waste received at the landfill.

Based on the above, the proposed project would not generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. In addition, the project would not conflict with applicable federal, State, and local management and reduction statutes and regulations related to solid waste. Thus, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.5-5 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Based on the analysis below and with implementation of mitigation, the impact is *less than significant*.

The proposed project would alter the existing drainage pattern of the site through increasing the amount of impervious surface within the site as compared to the site's existing undeveloped condition. To address the changes to the existing drainage pattern, the proposed project would include installation of an underground trunk line conveyance system to convey flows from new impervious surfaces within the project site to the proposed detention basins located in the northern portion of the site. The project would include two trunk lines, which would vary in diameter from 33 inches to 72 inches. From the site's new impervious surfaces, stormwater flows would be collected by drain inlets and conveyed either from the easterly trunk line to the westerly trunk line, or directly to the westerly trunk line, with the exception of Villages 5 and 6. From the westerly trunk line, flows would be conveyed for detention and treatment to the easterly and westerly detention basins, which would be located to the east and west of Malone Avenue, respectively. The east detention basin would have a storage capacity of 10.9 AF at its rim elevation of 80.3 feet. The west detention basin would

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[13] California Department of Resources Recycling and Recovery. *Estimated Solid Waste Generation Rates*. Available at: https://www2.calrecycle.ca.gov/wastecharacterization/general/rates. Accessed June 2024.

have a storage capacity of 53.1 AF at its rim elevation of 80.3 feet. The detention basins would be connected by way of a 48-inch storm drain line. From the west detention basin, peak flows would be metered to Grasshopper Slough through a gravity outfall structure. The outfall would be equipped with a flap gate at the slough to prevent backflow from the slough to the pond. Because a portion of the detention pond would be below the invert of the adjacent Grasshopper Slough, a small five-cubic-feet-per-second pump would be installed to discharge water into the slough.

As previously discussed, the 2006 Master Drainage Plan included a regional detention pond, regional storm drainage pump station, and outfall pipes. The design of the currently proposed trunk line conveyance system and detention basins diverges from the specifications within the 2006 Master Drainage Plan for the previously proposed regional detention pond in that the currently proposed detention basin volume has been greatly increased to allow the proposed project to proceed prior to the development of the regional storm drainage pump station to Bear River. The currently proposed trunk line conveyance system and detention basins would be sized to handle peak flows from the 100-year, 10-day storm event.

Using the methodology discussed above in the Methods of Analysis section, existing and post-development peak flows from the proposed project for the 10-year, 25-year, and 100-year, 24-hour storm events and the 100-year, 10-day storm event were calculated as part of the Interim Drainage Plan and are summarized in Table 4.5-4 below. As shown therein, the rate of post-development flows from the project site would be less than the rate of existing flows. Therefore, the proposed storm drainage system would be capable of adequately handling the amount of stormwater runoff associated with buildout of the project site, and the proposed project would not create or contribute runoff water in excess of the planned stormwater drainage system.

Table 4.5-4
Rate of Pre- and Post-Development Runoff to Grasshopper Slough from Heritage Oaks East Site (cfs)

Storm Event	Existing	Post-Development
10-Year, 24-Hour	24.8	22.2
25-Year, 24-Hour	32.7	22.5
100-Year, 24-Hour	52.3	23.9
100-Year, 10-Day	59.6	25.0

Source: MHM Inc., 2023.

In addition, because the Interim Drainage Plan is designed to accommodate the 100-year, 10-day storm event which will allow runoff to remain in the basin until peak flows have passed through the system, the proposed project would not be anticipated to increase water surface elevations that would induce flooding downstream.

However, as a final drainage plan has not yet been prepared, the final design of the stormwater drainage system and proper compliance with the specifications of the proposed storm drainage system detailed in the Interim Drainage Plan cannot be confirmed at this time. Therefore, a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.5-5 *As part of the improvement plan and final map submittal process, the project applicant shall prepare and submit a Final Drainage Plan to the City Engineer for review and approval. The Final Drainage Plan shall be reviewed in concert with the improvement plans to confirm conformity between the two. The Final Drainage Plan shall be prepared in conformance with the applicable requirements of City of Wheatland Public Works Construction Standards that are in effect at the time of improvement plan submittal.*

Cumulative Impacts and Mitigation Measures

As defined in Section 15355 of the CEQA Guidelines, "cumulative impacts" refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

The cumulative setting for impacts related to utilities encompasses buildout of the City of Wheatland General Plan planning area. Additional detail regarding the cumulative project setting can be found in Chapter 5, Statutorily Required Sections, of this EIR.

4.5-6 Increase in demand for utilities and service systems associated with the proposed project, in combination with future buildout of the Wheatland General Plan. Based on the analysis below, the cumulative impact is *less than significant*.

The following discussions provide an analysis of the proposed project's contribution to cumulative impacts associated with water supply, wastewater treatment, dry utilities, and solid waste within the City of Wheatland.

Water Supply

Cumulative development, in conjunction with the proposed project, would result in increased demand for water supplies. However, as discussed under Impact 4.5-2, the City currently has sufficient source and booster capacity to accommodate existing City water connections and the proposed project, and through installation of the proposed water storage tank, the City would also have sufficient storage capacity. In addition, new development within the City would be subject to development impact and permit fees, which would ensure that future projects contribute a fair share towards expanding water facilities and infrastructure deemed necessary by the City. New water infrastructure required as part of cumulative development would also be required to be designed and constructed in accordance with the applicable standards set forth in the City of Wheatland Public Works Construction Standards. Compliance with City standards would ensure new water lines installed as part of buildout of the General Plan planning area are constructed in conformance with proper materials and sizing.

Therefore, adequate water supply would be available to serve cumulative development within the City of Wheatland, in conjunction with the proposed project, and a less-than-significant impact would occur.

Wastewater Treatment

Cumulative development, in conjunction with the proposed project, would result in increased demand for wastewater treatment services provided by the City of Wheatland. As previously discussed, the City has approved the Wheatland Regional Sewer Pipeline Project, which will upgrade the City's sewer system by constructing the necessary pipes and pump stations to successfully convey all current and future wastewater into a regional sewer system serving south Yuba County. The approved pipeline will connect to an OPUD force main currently under design near Rancho Road and SR 65. OPUD sewers will convey flows to OPUD's WWTP, where the flows will be treated to a tertiary level. The City would also continue to implement any necessary improvements simultaneously and in addition to construction of the updated system.

The approved sewer pipeline that would connect to OPUD's WWTP is designed to accommodate wastewater flows from a maximum of 5,500 EDUs or 1.5 mgd ADWF from the City of Wheatland. The total number of EDUs is generally comprised of 1,469 EDUs associated with existing City development, 552 EDUs that would serve the proposed Caliterra Ranch project, 860 EDUs from buildout of City infill parcels in accordance with existing General Plan land use designations, and 2,619 EDUs that would serve a portion of future planned development within the Johnson Rancho and Hop Farm Annexation area.

New developments would also be required to be designed and constructed in accordance with the applicable standards set forth in the City of Wheatland Public Works Construction Standards and pay the City's development impact fee as established by Wheatland Municipal Code Chapter 3.26. Revenues generated by payment of the development impact fee would ensure that future development pays a fair share towards any expansions to the wastewater system deemed necessary by the City, including costs associated with sewer distribution system improvements.

Based on the above, impacts related to the increase in demand for wastewater treatment services and facilities associated with the proposed project in combination with future buildout of the Wheatland General Plan would be less than significant.

Electricity, Natural Gas, and Telecommunications Facilities

Environmental effects associated with the construction of new or expanded infrastructure would primarily be project-specific, rather than cumulative. As noted under Impact 4.5-1 above, while the project would include new connections to existing infrastructure located in the project vicinity, substantial extension of existing off-site infrastructure would not be required. Therefore, the proposed project would result in a less-than-significant cumulative impact related to construction of new or expanded electricity, natural gas, and telecommunications facilities.

Solid Waste

As noted previously, according to CalRecycle, the Ostrom Road Sanitary Landfill has a remaining capacity of 39,223,000 cubic yards and an estimated closure date of 2066.

Construction waste generated by development facilitated by buildout of the General Plan planning area would be required to comply with the applicable provisions of the CALGreen Code. The CALGreen Code requires at least 65 percent diversion of construction waste for projects permitted after January 1, 2017. In addition, recyclables collected and processed by Recology Yuba-Sutter would be bundled and transported to recycling centers, further preserving remaining capacity at the Ostrom Road Sanitary Landfill. Considering the remaining capacity at the landfill to serve future development, adequate capacity would be available to serve cumulative development within the City of Wheatland, in conjunction with the proposed project, and a less-than-significant impact would occur.

Conclusion

Based on the above, adequate water supply, wastewater, electricity, natural gas, telecommunication facilities, and landfill capacity would be available to serve cumulative development in conjunction with the proposed project. Therefore, a ***less-than-significant*** impact would occur.

Mitigation Measure(s)

None required.

4.5-7 Cumulative impacts related to the alteration of existing drainage patterns. Based on the analysis below, the cumulative impact is *less than significant*.

Cumulative development that could occur within the local watershed would be subject to the applicable provisions of the City's Unregulated Small Traditional Phase II MS4 Permit. As such, future development would be required to prepare detailed best management practice (BMP) and water quality maintenance plans to meet the standards of the City's Unregulated Small Traditional MS4 Permit. In addition, future development would be required to include site design measures, source control measures, hydromodification management, and Low Impact Development (LID) standards, as necessary. Therefore, cumulative development would not be anticipated to create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

With respect to the proposed project, as discussed under Impact 4.5-5, the proposed project would be subject to Mitigation Measure 4.5-5, which requires preparation of a Final Interim Drainage Plan to address existing conditions and the effects of the proposed project. Implementation of Mitigation Measure 4.5-5 would ensure that post-development flows would be accommodated by the proposed storm drainage infrastructure. As such, the proposed project would not contribute to cumulative impacts related to the alteration of existing drainage patterns

Based on the above, the potential cumulative impact associated with future development within the local watershed, in conjunction with the proposed project, would be ***less than significant***.

Mitigation Measure(s)

None required.

4.6 Other Effects

4.6 OTHER EFFECTS

4.6.1 INTRODUCTION

Section 15128 of the CEQA Guidelines requires that an EIR briefly describe why various environmental effects were determined not to be significant and, therefore, were not discussed in detail in the EIR. The Other Effects chapter of this EIR addresses environmental issues that were determined by the City of Wheatland, as lead agency, to not be significant with development of the proposed project. The reasons for the conclusion of non-significance are provided for each issue area below. Where applicable, mitigation measures are identified to reduce a potential impact to a less-than-significant level.

4.6.2 AESTHETICS

Consistent with CEQA Guidelines, Appendix G, Section I, an impact to aesthetics is considered significant if the proposed project would:

a) Have a substantial adverse effect on a scenic vista;
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a State scenic highway;
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point), or in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality; and/or
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Potential impacts related to questions ‘a’ through ‘d’ are discussed further below.

Questions ‘a’ and ‘b’

Examples of typical scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other areas designated for the express purpose of viewing and sightseeing. In general, a project’s impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista. The City’s General Plan does not designate official scenic view corridors.

According to the California Department of Transportation (Caltrans) Scenic Highway Mapping System, the project site is not within the vicinity of an officially designated State scenic highway.[1] The nearest State highway eligible for designation is a stretch of State Route (SR) 49, located approximately 16.1 miles to the east of the project site. The nearest officially designated State scenic highways are located at an even greater distance from the project site. In addition, scenic resources, such as rock outcroppings or historically significant buildings, do not exist within the project site or vicinity.

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[1] California Department of Transportation. *Scenic Highways*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed May 2023.

Based on the above, the proposed project would not have a substantial adverse effect on a scenic vista and would not damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a State scenic highway, and a ***less-than-significant*** impact would occur.

Question 'c'

The project site is located within the City boundaries. While the site is primarily surrounded by agricultural or undeveloped land, single-family residences, multi-family residences, and commercial uses are located to the north, and Bishop's Pumpkin Farm is located to the west. In addition, the project site has been subject to mass grading and includes Malone Avenue, which bisects the northern portion of the site. As such, the project site is considered to be located in an urbanized area, and the applicable threshold is whether the proposed project would conflict with applicable zoning and other regulations governing scenic quality.

As discussed further in the Project Description chapter of this EIR, the proposed project would require approval of a General Plan Amendment to change the site's designation from Low Density Residential (LDR) and Park to Low-Medium Density Residential (LMDR) and Medium Density Residential (MDR). Accordingly, the project site has already been anticipated by the City for urban development. The project would also require approval of a Rezone to amend the site's Planned Development (PD) zoning and establish site-specific development standards through the Heritage Oaks Wheatland General Development Plan. Unless otherwise specified within the General Development Plan (such as variations from City standards related to lot sizes and setback lengths), the proposed project would adhere to all applicable City standards. For example, according to the General Development Plan, on corner lots, 25 percent of the proposed single-family residences would be one story or contain one-story plates and elements, and two-story residences on internal lots with second-story setbacks would be encouraged to soften the architectural forms and enhance streetscapes. Repetitive floor plans and elevations would be alternately reversed along streets. At most, two identical plans would be located next to each other, and similar plans that are adjacent or opposite each other would have different colors and elevations.

With respect to screening and landscaping, as shown in Figure 4.6-1, the proposed project would include concrete masonry unit (CMU) walls to screen views of the residences from motorists driving along SR 65 to the east of the project site. Along the proposed internal street network, the project would also include wood fencing to screen views of the residences from motorists and pedestrians traveling within the site. According to the General Development Plan, the design and material for walls and fencing would vary throughout the project site. CMU walls along arterial roads would be a minimum height of six feet. Wall materials would consist of a textured face, such as cast patterns, and split-faced on the side facing the street. The wood fencing would include two types: enhanced wood fence and good neighbor wood fence. The former would be a minimum height of five feet and include redwood or cedar board construction, and the latter would include alternating panel faces.

With regard to landscape design, where perimeter walls are required, landscaping would be dense with shrubs and large trees. Adjacent to the park sites, which would link the north and south ends of the project site, the landscaping would be open at ground level but large canopy trees would provide views into the park beneath the canopies. Additional evergreen and screening trees would be provided between the meandering sidewalk and residential lots.

Figure 4.6-1
Wall and Fencing Map

Primary street trees, selected in accordance with the City's approved list of tree species, would be planted between the street edge and sidewalk or in a front yard, as appropriate.

It should be noted that the proposed project would include a well pump station and storage tank in Parcel B, located immediately north of North Park Drive and west of Lot 1. However, the aforementioned CMU walls and landscaping within the project site would screen views of the well pump station and storage tank from motorists travelling along SR 65.

To ensure the proposed project complies with the standards established by the General Development Plan, including, but not limited to, those discussed above, the proposed project would be subject to the City's Site Plan and Design Review process. The City's Site Plan and Design Review process allows various City departments or public agencies, such as the Fire District, City Engineer, Police Department, Building Department, Public Works, Planning Director, and any other affected City departments or public agencies, to evaluate the proposed project's compliance with the City of Wheatland's standards and regulations.

Based on the above, the proposed project would not conflict with applicable zoning and regulations governing scenic quality, and a ***less-than-significant*** impact would occur.

Question 'd'

The project site is currently undeveloped and does not currently contain any sources of light. Development of the project site with 685 single-family residences and associated parks and multi-use facilities would add new sources of light to the site to an area where none currently exist. Sources of light would include street lights along the internal roadways and along the project site frontage, as well as interior lights spilling from the windows of future residences. The proposed project would also generate vehicle trips, which in turn, would create sources of light from vehicle headlights. As previously noted, single-family residences, multi-family residences, and commercial uses are located to the north, and Bishop's Pumpkin Farm is located to the west. Light and glare associated with the proposed project would be expected to be similar to that of such uses in the surrounding area.

In addition, the proposed project would be required to comply with the City's Community Design Standards document, which includes goals, objectives, and standards to guide the design of new projects within the City, as well as all General Plan policies related to light and glare. For example, RES Standard 6.2.2 of the Community Design Standards requires residential outdoor lighting to provide the minimum intensity of lighting needed to provide security while minimizing glare, spillover, and energy consumption. Compliance with applicable policies, regulations, and standards would ensure that all new sources of light and glare associated with the proposed project would be minimized to the extent feasible. Furthermore, Site Plan and Design Review, as established by Wheatland Municipal Code Chapter 18.67, would ensure that impacts related to light and glare are evaluated prior to project approval, and, if necessary, reduced to the extent feasible.

Given the general consistency of the proposed project with nearby existing development and compliance with City requirements related to lighting, the proposed project would result in a ***less-than-significant*** impact related to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

4.6.3 AGRICULTURE AND FORESTRY RESOURCES

Consistent with CEQA Guidelines, Appendix G, Section II, an impact to agriculture and forestry resources is considered significant if the proposed project would:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract;
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code [PRC] Section 12220[g]), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]);
d) Result in the loss of forest land or conversion of forest land to non-forest use; and/or
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

Potential impacts related to questions ‘a’ through ‘e’ are discussed further below.

Questions ‘a’ and ‘e’

The project site is currently undeveloped and is not currently used for agricultural or forestry purposes. According to the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the majority of the project site is identified as Grazing Land and a small portion in the eastern area is designated as Other Land.[2]

According to the General Plan EIR, the City’s General Plan includes goals and policies that seek to maintain agricultural uses as long as possible to protect adjacent agricultural lands from the negative effects of continued urban development within the City. The General Plan EIR states that urban development may not occur on lands designated Urban Reserve before the General Plan is amended. However, the project site is currently designated as LDR and Park. Therefore, the site has been planned for urban development by the City, and buildout of the site with the proposed uses would not negatively affect agricultural lands located elsewhere in the City’s General Plan planning area. Based on the above, the proposed project would not convert Farmland to non-agricultural uses or convert forest land to non-forest uses, and a ***less-than-significant*** impact would occur.

Question ‘b’

According to the City’s General Plan EIR, Yuba County does not participate in the Williamson Act program. As such, the proposed project would not conflict with a Williamson Act contract. In addition, the project site is zoned PD, thereby ensuring conflicts with existing zoning for agricultural use would not occur. Overall, the project would not conflict with existing zoning for agricultural uses or Williamson Act contracts, and ***no impact*** would occur.

Questions ‘c’ and ‘d’

The project site is not considered forest land (as defined in PRC Section 12220[g]), timberland (as defined by PRC Section 4526), and is not zoned Timberland Production (as defined by

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[2] California Department of Conservation. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed May 2023.

Government Code Section 51104[g]). Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

4.6.4 BIOLOGICAL RESOURCES

Consistent with CEQA Guidelines, Appendix G, Section IV, an impact to biological resources is considered significant if the proposed project would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
b) Have a substantial adverse effect on any riparian habitat or other Sensitive Natural Community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
c) Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

Potential impacts related to questions ‘a’ through ‘f’ are discussed further below.

Question ‘a’

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (FESA) and California Endangered Species Act (CESA). Both acts afford protection to listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on California Native Plant Society (CNPS) Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

The project site was mass graded in 2006 to prepare for development. The project site currently remains undeveloped and consists of fallow fields containing weedy non-native grasses and forbs. A short reach of the perennial Bear River and the associated riparian area is located along a portion of the project site’s southern boundary. The nearby portion of the river is approximately

40 to 50 feet wide and features steeply eroded banks and a narrow floodplain contained within levees. Riparian scrub vegetation is sparsely distributed between open stretches impacted by human disturbances (e.g., fishing). The relatively narrow and small patches of riparian scrub vegetation along the Bear River may support limited breeding habitat for some birds and cover for small wildlife mammals and meso-carnivores. In addition, it should be noted that riparian vegetation associated with Grasshopper Slough is located along the northern boundary of the project site.

In order to determine the proposed project's effects on biological resources, a Biological Resources Assessment (BRA) was conducted by ECORP Consulting, Inc. for the proposed project (see Appendix I of this EIR).[3] ECORP biologists performed a review of literature sources, current and historical aerial imagery, previous biological studies conducted for the project site and surrounding area, topographic mapping, soil survey mapping available from the Natural Resources Conservation Service (NRCS) Web Soil Survey, and USFWS National Wetlands Inventory (NWI) mapping. In addition, ECORP Consulting, Inc. reviewed the following sources to identify special-status plant and wildlife species:

- CDFW's California Natural Diversity Database (CNDDB) data for the Sheridan and Wheatland 7.5-minute quadrangles and the surrounding ten quadrangles;
- CNPS Rare Plant Inventory data for the Sheridan and Wheatland 7.5-minute quadrangles and the surrounding ten quadrangles;
- USFWS Information for Planning and Consultation (IPaC) Resource Report List for the project site; and
- National Marine Fisheries Service (NMFS) Resources data for the Sheridan and Wheatland 7.5-minute quadrangles.

In addition, site reconnaissance was conducted on September 26, 2023. ECORP biologists visually assessed the project site while walking meandering transects through all portions of the site. Areas not accessible on foot were scanned using binoculars.

The intent of the database review was to identify documented occurrences of special-status species in the vicinity of the project area, to determine their locations relative to the project site, and to evaluate whether the site meets the habitat requirements of such species. Based on the BRA, several special-status species are known to occur within the project region. However, the majority of species are not expected to occur on-site due to the lack of suitable habitat. The potential for special-status species to occur on the project sites is discussed in further detail below.

Special-Status Plants

Special-status plants generally occur in relatively undisturbed areas within vegetation communities such as vernal pools, marshes and swamps, chenopod scrub, seasonal wetlands, riparian scrub, chaparral, alkali playa, dunes, and areas with unusual soil characteristics, such as the serpentine soils. According to the BRA, special-status plant species were not identified as having potential to occur within the project site due to current and previous site disturbances (e.g., mass grading, farming, etc.). Therefore, suitable habitat for special-status plant species is not anticipated to occur within the project site, and impacts to special-status plant species would not occur as part of the proposed project.

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[3] ECORP Consulting Inc. *Biological Resources Assessment for the Heritage Oaks East Project.* November 27, 2023.

Special-Status Wildlife

As discussed above, the project site is currently undeveloped and has been subject to mass grading and annual mowing, which discourages wildlife habitation. Therefore, suitable habitat for a majority of special-status wildlife species known to occur in the vicinity is not anticipated to occur within the site. Nonetheless, various special-status wildlife species, including special-status fish, Crotch's bumble bee, California red-legged frog (CRLF), giant garter snake, northwestern pond turtle, valley elderberry longhorn beetle (VELB), pallid bat, western red bat, Swainson's hawk, burrowing owl, and tricolored blackbird, as well as other nesting raptors and migratory birds protected by the MBTA, have the potential to occur on the project site, as detailed below.

Special-Status Fish

Special-status fish species fish occur in streams, tributaries, and other moving waters. The portion of the Bear River located south of the project site could provide suitable or marginal habitat for seven special-status fish, including the following: riffle sculpin, Pacific lamprey, Sacramento hitch, hardhead, Central Valley fall/late-fall-run Evolutionarily Significant Unit (ESU) Chinook salmon, Sacramento splittail, the Central Valley Distinct Population Segment (DPS) steelhead. The foregoing special-status fish species are designated as Species of Special Concern by the CDFW, with the exception of the Central Valley DPS steelhead, which is listed as threatened under FESA. The Bear River has been designated as a critical habitat for Central Valley DPS steelhead.

However, the proposed project would preserve 2.83 acres of open space in the southern portion of the project site closest to the Bear River. As such, construction activities would not occur within such areas, and the proposed project would not result in impacts to the Bear River. In addition, according to the BRA, occurrences of riffle sculpin, Pacific lamprey, Sacramento hitch, hardhead, Central Valley fall/late-fall run ESU Chinook salmon, and Sacramento splittail have not been documented in the CNDDB within five miles of the project site. Overall, impacts to special-status fish species are not anticipated to occur as a result of the proposed project.

Crotch's Bumble Bee

Crotch's bumble bee is a candidate species for listing under both FESA and CESA. The species has a limited distribution in southwestern North America, including Mexico, Baja California, Baja California Sur, and has been documented in southwest Nevada near the California border. Crotch's bumble bee was historically common in the Central Valley of California, but now appears to be absent from most of the valley, especially in the center of its historic range. In California, Crotch's bumble bee inhabits open grasslands and scrub habitats.

All bumble bees have three basic requirements: suitable nesting sites for the colonies; availability of nectar and pollen from floral resources throughout the duration of the entirety of the colony period (spring, summer, and fall); and suitable overwintering sites for the queens. Nests are often located underground in abandoned holes made by ground squirrels, mice, and rats or occasionally abandoned bird nests. Some species nest on the surface of the ground (in tufts of grass) or in empty cavities. Bumble bees that nest aboveground may require undisturbed areas with nesting resources such as grass and hay to protect nests. Areas with woody cover or other sheltered areas provide bumble bees sites to build their nests (e.g., downed wood, rock walls, brush piles, etc.).

Crotch's bumble bee was not documented within the CNDDB as having occurred within five miles of the project site. While the project site is heavily disturbed through regular mowing, the on-site ruderal areas and woodland may represent potential nesting habitat for the species. Therefore, the potential exists for Crotch's bumble bee to be present within the project site, and the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on Crotch's bumble bee.

California Red-Legged Frog

The CRLF is listed as threatened by FESA and is a California Species of Special Concern. The current range and abundance of CRLF is greatly reduced from historic levels, with most remaining populations occurring along the coast, in blue oak woodland, foothill pine/oak, and riparian deciduous forests in the foothills of the western slope of the Sierra Nevada. Breeding habitat for the CRLF includes creeks and ponds with dense growths of woody riparian vegetation (especially willows), as well as coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded or backwater portions of streams. Mature CRLFs use dense, shrubby, or emergent riparian vegetation near deep, still, or slow-moving water, especially where dense stands of overhanging willow and an intermixed fringe of cattail occur adjacent to open water. Upland and riparian areas provide important sheltering habitat during the summer when CRLFs are dormant in dense vegetation, burrows, and leaf litter.

The nearby portion of the Bear River and the associated riparian vegetation provides marginally suitable habitat for the CRLF. However, according to the BRA, the CRLF has not been documented within the CNDDB as having occurred within five miles of the project site. In addition, as previously discussed, the proposed project would preserve 2.83 acres of open space in the portion of the project site surrounding the Bear River. Overall, the CRLF is not expected to occur on-site. As such, impacts to CRLF would not occur as a result of the proposed project.

Giant Garter Snake

The giant garter snake is listed as a threatened species pursuant to both FESA and CESA. As one of the most aquatic garter snakes, the species is rarely found far from water and lives in marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low-gradient streams. Rice agriculture provides habitat and supports giant garter snake populations in the Sacramento Valley that are more robust than those further south. Giant garter snakes use grassy bank-side habitats for basking and higher-elevation uplands for cover and retreat from floodwaters during their inactive winter season.

The nearby portion of the Bear River and the associated riparian vegetation provides marginally suitable habitat for the giant garter snake. However, as previously discussed, the proposed project would preserve 2.83 acres of open space in the portion of the project site surrounding the Bear River. According to the BRA, giant garter snakes have not been documented within the CNDDB as having occurred within five miles of the project site. Overall, the giant garter snake is not anticipated to occur within the project site. As such, impacts to giant garter snake would not occur as a result of the proposed project.

Northwestern Pond Turtle

The northwestern pond turtle is designated as a California Species of Special Concern and is a candidate to be added to the federal list of threatened species. Northwestern pond turtles occur in a variety of fresh and brackish water habitats including marshes, lakes, ponds, and slow-moving streams, but typically leave the aquatic habitats in the fall to reproduce and to overwinter. Deep, still waters with abundant emergent woody debris, overhanging vegetation, and rock outcrops create the optimal habitat for basking and thermoregulation. The species breeds from mid- to late spring in open grasslands or sandy banks adjacent to the water, and deposits eggs in nesting sites located within 200 meters of the aquatic habitats. Hatchlings and juveniles require shallow edge water with relatively dense submergent or short emergent vegetation in which to forage. The species feeds mainly on invertebrates such as insects and worms, but also consumes small fish, frogs, mammals, and some plants. Predators of the northwestern pond turtle include raccoons, coyotes, raptors, weasels, large fish, and bullfrogs.

According to the BRA, northwestern pond turtles have been recorded within five miles of the project site. In addition, the nearby portion of the Bear River could provide suitable aquatic habitat for the species. Additionally, the upland habitat adjacent to the Bear River represents suitable dispersal lands and potential nesting habitat for the species. Therefore, the potential exists for northwestern pond turtle to be present within the project site, and the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on northwestern pond turtle.

Valley Elderberry Longhorn Beetle

VELB is listed as threatened pursuant to FESA and may occur within the project site if the species' host plant, the elderberry shrub, is present. VELB is completely dependent on elderberry shrubs, which occur in riparian and woodland communities within California's Central Valley and the associated foothills. Female beetles lay their eggs in crevices on the stems or on the leaves of living elderberry plants. When the eggs hatch, larvae bore into the stems. The larval stages last for one to two years. The fifth instar larvae create emergence holes in the stems and then plug the holes and remain in the stems through pupation. Adults emerge through the emergence holes from late March through June. The short-lived adult beetles forage on leaves and flowers of elderberry shrubs.

Pursuant to the BRA, a protocol-level VELB survey was conducted on November 14, 2023, in accordance with USFWS guidelines within the project site and all accessible areas within a 165-foot buffer. As part of the VELB survey, qualified biologists walked meandering transects throughout the on-site woody vegetation. All elderberry shrubs with at least one stem measuring one inch or greater in diameter at ground level were mapped, and the habitat, height, and health of the shrubs were assessed and noted. Finally, all stems were inspected for the presence of VELB and VELB exit holes. A total of 24 elderberry shrubs were identified within the survey area, comprised of 13 elderberry shrubs located within the 165-foot buffer and 11 elderberry shrubs located within the project site. The elderberry shrubs documented within the survey area were of variable maturity and condition, often multi-stemmed, and exhibited many root sprouts and resprouts.

Of the 11 on-site elderberry shrubs, 10 are located within avoided or preserved parcels and one elderberry shrub is located within the proposed development area along Malone Avenue. The aforementioned elderberry shrub is a small, non-riparian shrub without evidence of VELB exit holes, and occurs approximately 2,200 feet from the next-nearest elderberry shrub. The species has limited dispersal capabilities, and habitat fragmentation decreases the likelihood of colonization of unoccupied shrubs.

Based on the above, the proposed project is not anticipated to directly impact VELB. Nonetheless, indirect impacts to VELB could occur if construction activities associated with the proposed project disturbs any occupied elderberry shrubs.

Pallid Bat

The CDFW has designated the pallid bat as a Species of Special Concern. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. The species inhabits elevations below 6,000 feet, rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher-elevation coniferous forest (above 7,000 feet) throughout North America from the interior of British Columbia south to Mexico, and east to Texas. Roosting locations for individuals or groups include the crevices of rocky outcrops and cliffs, caves, mines, trees, and various human structures, such as bridges and barns. Pallid bats glean a variety of arthropod prey from surfaces and captures insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards.

One occurrence of pallid bat has been documented in the CNDDB within five miles of the project site. Trees located on-site could provide suitable roosting habitat for the species. Therefore, pallid bat could occur within the project site, and impacts could occur if roosting habitat is removed during project construction.

Western Red Bat

The western red bat is considered a Species of Special Concern by the CDFW. The species has a broad range that extends from southern British Columbia in Canada through Argentina and Chile in South America, including much of the western United States. Western red bats roost primarily in the foliage of trees (including orchard trees, willows, cottonwoods, and sycamores), shrubs located in edge habitats bordering streams or open fields, and occasionally in urban areas or caves. The species feeds on a variety of insects and generally begins to forage one to two hours after sunset. The species is considered highly migratory; however, the timing of migration and the summer ranges of males and females may be different.

Western red bat has not been documented in the CNDDB as having occurred within five miles of the project site. However, the on-site trees and shrubs could provide suitable roosting habitat. Therefore, western red bats could be located within the project site, and impacts could occur if potential roosting habitat is removed during project construction.

Swainson's Hawk

The Swainson's hawk is a State-listed threatened species. The species is generally found visiting the State during the summer; however, a small population of Swainson's hawks remain residents in California year-round. Swainson's hawk inhabits open to semi-open areas at low to middle elevations in valleys, dry meadows, foothills, and level uplands. The species nests almost exclusively in trees at least 10 feet tall; however, the species can occasionally nest in shrubs, on telephone poles, and on the ground. Foraging habitats for Swainson's hawks include alfalfa fields, fallow fields, beet, tomato, and other low-growing row or field crops, dry and irrigated pastures, and unflooded rice land.

According to the BRA, eight occurrences of Swainson's hawk have been documented in the CNDDB within five miles of the project site, and trees growing within and adjacent to the project site could provide suitable nesting habitat. In addition, the project site provides suitable foraging habitat. Therefore, the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on Swainson's hawk.

Burrowing Owl

The burrowing owl is a CDFW-designated Species of Special Concern. Burrowing owls inhabit dry, open, rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. The species can also be located in developed areas, including golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds. The species typically uses burrows created by the California ground squirrel, but may also use manufactured structures, such as concrete culverts or pipes, debris piles, or openings beneath pavement. The burrowing owl breeding season typically occurs throughout spring and summer.

Pursuant to the BRA, one occurrence of burrowing owl has been documented within five miles of the project site in the CNDDB. The majority of the project site has been subject to agricultural activities and regular disking, which would preclude the use of the project site as burrowing owl habitat. However, ruderal areas that cannot be disced or plowed could provide marginally suitable burrowing owl habitat. Therefore, while burrowing owls have low potential to occur within the project site, construction activities associated with the proposed project could result in impacts if inhabited burrows are present on-site.

Tricolored Blackbird

The tricolored blackbird is a State-listed threatened species. The species is typically found near freshwater and marsh habitats. Nesting colonies are typically found in stands of cattail and bulrush, although the species is also known to use blackberry patches and thistle clumps adjacent to water. Flooded regions, margins of ponds, and grassy fields provide typical foraging habitat for the species.

Six occurrences of tricolored blackbird have been documented within five miles of the project site in the CNDDB. The riparian vegetation associated with Grasshopper Slough along the northern boundary of the project site includes blackberry brambles, and thus, could provide suitable breeding habitat for the tricolored blackbird. As such, the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on tricolored blackbird.

Nesting Raptors and Migratory Birds

The project site contains existing trees that could be used by nesting raptors and migratory birds protected by the MBTA. Construction activities that adversely affect the nesting success of raptors and migratory birds (i.e., lead to the abandonment of active nests) or result in mortality of individual birds constitute a violation of State and federal laws. Thus, in the event that construction activities associated with the project would occur during the breeding season and such species are present on-site, construction could result in an adverse effect to species protected under the MBTA.

Conclusion

Based on the above, the proposed project could have an adverse effect, either directly or through habitat modifications, on special-status wildlife species identified in local or regional plans, policies, or regulations, or by the CDFW or the USFWS, and a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

Crotch's Bumble Bee

4.6-1 *A qualified biologist shall conduct one preconstruction nesting surveys with focus on detecting active Crotch's bumble bee nesting colonies within seven days prior to ground-disturbing activities that are scheduled to occur during the flight season (February through October). The results of the survey shall be submitted to the City of Wheatland Community Development Department.*

The survey shall be conducted within suitable nesting habitat during suitable weather conditions at an appropriate time of day for detection. If nests or Crotch's bumble bees are not observed, further measures are not necessary. If nests are not found, but the species is present, a qualified biological monitor shall be present during initial vegetation or ground-disturbing activities that are scheduled to occur between February and October. The qualified biologist shall immediately notify the California Department of Fish and Wildlife (CDFW) of the detection, as further coordination may be required to avoid or mitigate certain impacts.

If an active Crotch's bumble bee nest is detected on-site, an appropriate no-disturbance buffer zone shall be established around the nest, as determined by the qualified biologist, to reduce the risk of disturbance or incidental take. The designated biologist shall coordinate with CDFW to determine if additional avoidance or minimization measures are required. Nest avoidance buffers may be removed at the completion of the flight season and/or once the qualified biologist deems the nesting colony is no longer active, and CDFW agrees with the determination. Proof of compliance with applicable avoidance or minimization measures shall be submitted to the Wheatland Community Development Department.

Northwestern Pond Turtle

4.6-2 *Ten days prior to the start of ground- or vegetation-disturbing activities, a qualified biologist shall conduct a focused survey for northwestern pond turtle nests within all suitable habitat in the project site. Any discovered nests shall remain undisturbed until eggs have hatched. The results of the survey shall be submitted to the City of Wheatland Community Development Department.*

4.6-3 *Forty-eight hours prior to the start of ground- or vegetation-disturbing activities, a qualified biologist shall conduct a preconstruction survey for northwestern pond turtle within all suitable habitat in the project site. Any individual northwestern pond turtles discovered on-site immediately prior to or during construction of the proposed project shall be allowed to move out of the work area of their own volition. If leaving the species to evacuate the project site voluntarily is not feasible, the on-site individuals shall be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the on-site location where they were found. The results of the survey shall be submitted to the City of Wheatland Community Development Department.*

Valley Elderberry Longhorn Beetle

4.6-4 *Prior to commencement of construction activities, avoidance zones for elderberry shrubs shall be established and clearly demarcated, where feasible, to the satisfaction of the City of Wheatland Community Development Department.*

Avoidance zones shall include the drip line of the elderberry shrub plus a 20-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. The area to be avoided shall be fenced and/or flagged as close to construction limits as possible. Ground- or vegetation-disturbing activities shall not occur within avoidance zones. A qualified biologist/biological monitor shall be present if work must occur within the avoidance buffer to ensure elderberry shrubs are not impacted by the proposed project.

4.6-5 *Prior to commencement of construction activities, the elderberry shrub along Malone Avenue shall be transplanted to the portion of the Bear River riparian area located south of the project site at a location that avoids existing shrubs by a minimum of 20 feet. The transplanting shall follow USFWS VELB Guidance and the most current version of the Tree Care Industry Association (TCIA) ANSI A300 (Part 6) guidelines for transplanting. A qualified biologist/biological monitor shall be present for the duration of transplanting activities to ensure VELB and existing elderberry shrubs are not impacted by the work. Proof of transplantation shall be submitted to the Wheatland Community Development Department.*

4.6-6 *During construction activities associated with the proposed project, dust generation shall be minimized by applying water or by presoaking work areas for all work within 30 feet of elderberry bushes. Proof of compliance shall be submitted to the Wheatland Community Development Department.*

Pallid Bat

4.6-7 *Prior to any construction activities that may impact pallid bat habitat (e.g., mature trees), a qualified biologist shall conduct a bat habitat assessment for suitable bat roosting habitat. The results of the survey shall be submitted to the City of Wheatland Community Development Department. If suitable roosting habitat is not identified, further measures are unnecessary. If suitable roosting habitat and/or signs of bat use are identified during the assessment, the roosting habitat shall be avoided to the extent possible, and the following measures shall be implemented:*

- *If suitable roosting habitat and/or signs of bat use are identified in a tree or other habitat structure that must be removed, a qualified biologist shall conduct a night emergence survey within 14 days prior to habitat removal to determine if bats are roosting. Visual emergence surveys shall be conducted 45 minutes prior to sunset and continue for two hours. The qualified biologist shall observe potential roosting features using ambient light conditions and/or night observation devices, when applicable, for exiting bats. Acoustic monitoring shall be conducted to collect bat echolocation calls to facilitate species identification. Emergence surveys shall not be conducted during the bat hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45°F or lower and rain is not over 0.5 inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period.*
- *If occupied roosting habitat is found within 50 feet of proposed construction activities, a qualified biologist shall prepare a Bat Management Plan for CDFW's review and approval prior to removal of the trees. The Bat Management Plan shall include specific methods and materials for passive*

exclusion of bats, and/or a two-step tree removal process, species-specific habitat replacement mitigation, and/or post-construction mitigation monitoring. If a maternity roost is located, the roost shall remain undisturbed until after the maternity season, or until a qualified biologist has determined the roost is no longer active. If bat roost mitigation is required, roost mitigation shall be installed as far in advance of the bat maternity season as possible, but at least than 30 days prior to roost removal.

Western Red Bat

4.6-8 *If the shrubs or trees proposed to be removed or trimmed are determined by a qualified bat biologist to be suitable day-roosting habitat for western red bat, then a qualified bat biologist shall prepare a Bat Management Plan. The Bat Management Plan shall include specific avoidance and minimization measures to reduce impacts to roosting western red bats, including requiring preconstruction acoustic surveys for western red bats, a preconstruction survey report including methods, results, and recommendations based on the acoustic survey, roost removal timing outside of the maternity and hibernation seasons, non-disturbance buffers, methods and materials for bat deterrents, and/or species-specific habitat replacement mitigation as necessary and appropriate. The Bat Management Plan shall be submitted to CDFW and the Wheatland Community Development Department for approval prior to the removal of trees and shrubs.*

Swainson’s Hawk

4.6-9 *If construction activities occur between March 1 to August 31, a qualified biologist shall conduct a preconstruction survey for Swainson’s hawks’ nests on-site and in a 0.25-mile buffer around the project site within 14 days prior to the start of ground- or vegetation-disturbing activities. The results of the survey shall be submitted to the City of Wheatland Community Development Department. Any active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.*

4.6-10 *Prior to the commencement of ground-disturbing activities, the project applicant shall consult with CDFW to determine mitigation for loss of on-site Swainson’s hawk foraging habitat, which consists of the disturbed grassland and agricultural areas on-site. Mitigation at a to-be-determined ratio based on CDFW guidelines may be achieved through purchase of CDFW-approved mitigation bank credits. A report summarizing compliance with the provisions established herein shall be submitted to the City of Wheatland Community Development Department.*

Burrowing Owl

4.6-11 *Prior to the commencement of ground-disturbing activities, a qualified biologist shall conduct a take avoidance preconstruction survey according to CDFW guidelines. The results of the survey shall be submitted to the City of Wheatland Community Development Department. If no burrowing owls or evidence are detected, no further measures are necessary.*

If active or occupied burrows are detected during the breeding season (February 1 through August 31), avoidance buffers shall be established in coordination with CDFW until the end of the breeding season. If active or occupied burrows are located within the project site and destruction is unavoidable, the project applicant shall develop a Burrowing Owl Exclusion Plan, which could include passive relocation according to CDFW guidelines. Upon CDFW review and approval of the Burrowing Owl Exclusion Plan, all measures contained therein shall be implemented.

Tricolored Blackbird

4.6-12 *Within 30 days prior to the start of construction activities, a qualified biologist shall conduct a preconstruction survey for nesting tricolored blackbird on-site and within a 500-foot buffer around the project site. The results of the survey shall be submitted to the City of Wheatland Community Development Department. If active nesting colonies are not present, further measures are not necessary.*

If any active nesting colonies are observed, the nesting colony shall be designated a sensitive area and protected by an avoidance buffer of 500 feet, or as otherwise determined in coordination with CDFW. The avoidance buffer shall be maintained until a qualified biologist has determined that the young have fledged and the colony is no longer active. Monitoring of active nesting colony shall be conducted by a qualified biologist during construction activities, and avoidance buffers may be adjusted if any agitated behavior by the nesting birds is observed.

Nesting Raptors and Migratory Birds

4.6-13 *If construction activities begin during February 1 to September 30, a qualified biologist shall conduct a preconstruction nesting bird survey on-site and within a 500-foot buffer (for raptors) and a 100-foot buffer (for other non-raptor migratory birds) around the project site within 14 days prior to the start of ground- or vegetation-disturbing activities. If any active nests are observed, the nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or that the nest is otherwise no longer occupied. The results of the survey shall be submitted to the City of Wheatland Community Development Department.*

Question 'b'

Two areas that support riparian scrub habitat are located in proximity, but outside of, the project site, including a narrow corridor of riparian vegetation along the banks of the Bear River south of the project site boundaries and a vegetation community along the northern boundary of the project site that appears to be associated with an off-site drainage. The southern riparian scrub habitat would be considered a Sensitive Natural Community; however, the proposed project would not involve any construction activities or other disturbance in proximity to the area. The northern riparian scrub habitat is a blackberry scrub habitat and is not classified as a Sensitive Natural Community by the Manual of California Vegetation (MCV).

A small area of valley oak woodland and forest habitat, which consists of a small grove of valley oaks, is located within the southern portion of the site. The proposed project is anticipated to avoid the valley oak woodland and forest habitat area; however, a formal delineation of Sensitive

Natural Communities on and/or adjacent to the project site has not been conducted. If Sensitive Natural Communities are delineated on the project site and the proposed project would involve disturbance of such a community, a ***significant*** impact related to a substantial adverse effect on a Sensitive Natural Community could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-14 *Prior to the commencement of ground-disturbing activities, a qualified biologist shall conduct vegetation surveys within the project site and establish a 25-foot buffer to delineate Sensitive Natural Communities. If Sensitive Natural Communities are identified on-site, avoidance zones for Sensitive Natural Communities shall be established and clearly demarcated prior to construction. Avoidance zones shall include the extent of the Sensitive Natural Community plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. A qualified biologist or biological monitor shall be present if work must occur within the avoidance buffer to ensure Sensitive Natural Communities are not impacted by the work. Proof of compliance shall be submitted to the City of Wheatland Community Development Department for approval.*

Question 'c'

Pursuant to the BRA, aquatic resources or potential waters of the State do not occur within the project site beyond the portion of the Bear River located at the southern boundary. Development is not proposed within the southernmost portion of the project site nearest to the Bear River. Therefore, the proposed project would not have a substantial adverse effect on State- or federally protected wetlands, and a ***less-than-significant*** impact would occur.

Question 'd'

Movement corridors or landscape linkages are typically linear habitats that connect two or more habitat patches and provide benefits to wildlife species by reducing inbreeding and increasing the potential for recolonization of habitat patches. Surrounding existing uses to the project site include agricultural uses and urbanized portions of the City. As such, the surrounding vicinity has been subject to mass disturbance, which precludes the opportunity for wildlife corridors to exist. In addition, according to the BRA, wildlife movement corridors or nursery sites are not present on-site, with the exception of the Bear River. However, development associated with the proposed project would avoid the Bear River.

Based on the above, the proposed project would not interfere substantially with the movement of any native resident, migratory fish/wildlife species, established native resident, or migratory wildlife corridors, nor impede the use of native wildlife nursery sites, and a ***less-than-significant*** impact would occur.

Question 'e'

The City's Municipal Code does not contain specific policies or ordinances related to the protection of biological resources, such as a tree preservation policy or ordinance. However, the proposed project could impact valley oak trees subject to regulation under the Oak Woodlands Conservation Act (PRC Section 21083.4). The Oak Woodlands Conservation Act assists counties in determining whether a development project would result in significant impacts associated with the conversion of oak woodlands. Given that valley oak trees occur on-site, protected oak trees could be adversely affected, which would conflict with the Oak Woodlands Conservation Act. Therefore, a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-15 *Prior to commencement of ground-disturbing activities, including tree removal, a certified arborist shall prepare an arborist report documenting all trees with a diameter at breast height (DBH) of five inches or greater within the project site. The results of the arborist report shall be submitted to the City of Wheatland Community Development Department. If such oak trees are identified as a result of the arborist report, further measures shall be taken according to the Oak Woodlands Conservation Law, including the creation of an Oak Woodlands Management Plan, dedication of easements, or other measures developed by the City of Wheatland, such as long-term cost-sharing incentive payments.*

Question ‘f’

Yuba County is currently in the process of drafting a Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) with Sutter County. However, the HCP/NCCP has not yet been adopted, and the City of Wheatland is not a participant. Therefore, the proposed project would not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State habitat conservation plan, and ***no impact*** would occur.

4.6.5 CULTURAL RESOURCES

Consistent with CEQA Guidelines, Appendix G, Section V, an impact to cultural resources is considered significant if the proposed project would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5; and/or
c) Disturb any human remains, including those interred outside of dedicated cemeteries.

Potential impacts related to questions ‘a,’ ‘b,’ and ‘c’ are discussed further below.

Question ‘a’

Section 15064.5 of the CEQA Guidelines provides instructions for a lead agency to consider the effects of projects on historical resources. A historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (PRC Section 21084.1), a resource included in a local register of historical resources (PRC Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (PRC Section 15064.5[a][3]).

Resources eligible for listing include buildings, sites, structures, objects, or historic districts that retain historical integrity and are historically significant at the local, State or national level under one or more of the following four criteria:

1. Associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. Associated with the lives of persons important to local, California, or national history;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics. Pursuant to the National Register of Historic Places (NRHP) eligibility criteria, a resource must be at least 50 years old in order to be considered historic, except in exceptional circumstances. In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance.

A Cultural Resources Inventory and Evaluation Report (Cultural Resources Report) was prepared for the proposed project by ECORP Consulting, Inc.[4] The Cultural Resources Report included a review of records to determine the extent of previous surveys within a 0.5-mile radius of the project site, and whether previously documented precontact or historic archaeological sites, architectural resources, or traditional cultural properties exist within the site. The bulk of the review was conducted at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) Inventory at California State University, Sacramento. Sources of information included, but were not limited to, the following: the California Historical Landmarks; CRHR; and California Points of Historical Interest as listed in the California Office of Historic Preservation's Historic Property Directory and the Built Environment Resources Directory. Archival research included an examination of 19th and 20th century maps and aerial photographs of the general project vicinity and project site. In addition, letters were sent on November 6, 2023, to the Yuba County Historical Society and the Wheatland Historical Society to obtain further information on historic events, people, or resources in the area. Lastly, a field survey of the project site was completed on October 26 and 27, 2023. Surface examination consisted of the surveyor walking in 15-meter transects. Ground visibility was excellent due to the recent mass disturbance at the project site.

According to the Cultural Resources Report, several wells and irrigation features located throughout the project site were noted during the 2023 field survey; however, modern materials and methods used in their construction indicated that the structures were less than 50 years old, and, therefore, ineligible to be considered historical. In addition, previously recorded resources were not documented within the project site.

The 2023 field survey also identified several new historic-era cultural resources: HO-09, a historic-era trash scatter and several associated scatters and isolates throughout the site; HO-11, the Bear River North Levee; HO-12, several segments of Transmission Line 01; and HO-13, Malone Avenue. Each newly identified historical resource is discussed in further detail below.

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[4] ECORP Consulting, Inc. *Cultural Resources Inventory and Evaluation Report for the Heritage Oaks East Project*. December 2023.

HO-09

A refuse scatter was located in the general vicinity of a previously standing structure first seen on a 1947 aerial photograph and depicted on the topographic maps in the southern portion of the project site at the base of the Bear River North Levee. The scatter was comprised of a steel car wheel, a pull-tab beer can and tab, a three-inch metal pully, unidentifiable and corroded scrap metal crumbles, evidence of a burn pile, ceramic sherds, and glass shards. The ceramic types observed included porcelain, whiteware, salt-glazed, and brown-glazed sherds of various sizes. The glass observed included aqua, clear, and amethyst shards of various sizes, square and round bottle bases, a mold-blown screw-top bottle neck, and milk glass.

According to the Cultural Resources Report, two potentially historic resources were located within HO-09. The first is an isolated ceramic sherd with an inscription reading “By Laurel of California U.S.A.” on the underside of a saucer or plate, in reference to a ceramic manufacturer in the City of Stockton between 1948 and 1962. The sherd is orange or brownish in color and measures approximately three by two inches. The second potentially historic resource within HO-09 is a terra cotta fragment measuring approximately one foot by one foot, and four inches thick. A smaller, diamond-shaped fragment appears to have broken off the larger fragment, and was located approximately eight inches away from the larger piece. The smaller fragment measures approximately six by four inches and is 0.25- to 0.5-inch thick. The larger chunk appears to be slightly curved, but neither piece includes features to indicate use, type, or date of manufacturing.

Additionally, two smaller trash scatters are located south of a formerly agricultural area adjacent to SR 65. Based on the significantly disturbed nature of the project site, the Cultural Resources Report hypothesizes that the scattered material originated from HO-09 and was redeposited throughout the project site during the mass grading activities in 2006. The smaller scatters included modern and historic-era glass, ceramics, iron, and other materials. While most objects within the two minor scatters were amorphous, a jadeite cup or bowl base fragment was observed. Jadeite is a type of green-hued milk glass first manufactured in the 1930s that became popular between 1945 and 1975, when manufacturing ceased. Jadeite has regained popularity and is once again being manufactured under various brands. The lack of a maker’s mark on the base prevented conclusive identification of the year of origin.

According to the Cultural Resources Report, HO-09 does not make a significant contribution to the patterns of history within the local area or the State, is not associated with archival records tied to someone significant in State or local history, is not associated with the remains of any structures, and has little potential for subsurface deposits. Therefore, due to a lack of historical significance, HO-09 does not meet NRHP or CRHR eligibility criteria as a historic-era resource or as part of any known or suspected historic district.

HO-11

An approximately 1,600-foot-long segment of the Bear River North Levee within Reclamation District No. 2103 comprises HO-11. The earthen levee is trapezoidal and approximately 14 feet above the levee toe; the levee crown is 15 feet wide and contains a gravel road. The southern end of the levee extends roughly 200 feet from the crown to the riverbed, while the northern side is characterized by vacant farmland and orchards to the north and south of the river. Both SR 65 and UPRR tracks run just east of the levee.

Within the context of all the levees developed across the Yuba, Sutter, and Placer counties, HO-11 does not have a significant association with late 19th century reclamation. Although the levee shares an association with the 1870s era Bear River Levee District No. 1, the levee sections were built in a piecemeal fashion by various property owners. In comparison to larger and more elaborate levee systems, such as the Natomas Consolidated Company Levee south of the Bear River, the Bear River North Levee was not a significant catalyst for new agricultural and economic development in the City of Wheatland. As such, HO-11 is ineligible for a NRHP/CRHR listing under Criterion 1.

Although records exist of landowner W. O. Armstead, a contributor to the Bear River Levee District No. 1 project, Armstead was not a founding member or leading member of the group. The records review conducted as part of the Cultural Resources Report did not identify other individuals with a significant connection to the levee. Given that information does not exist in the archival record to suggest that the levee is associated with significant people, HO-11 is ineligible for the NRHP/CRHR under Criterion 2.

With respect to Criterion 3, the original section of the Bear River North Levee was built in the late 1870s, but the original height and configuration of the levee have been replaced by numerous modifications throughout the 20th century. According to the Cultural Resources Report, the levee does not embody distinctive characteristics of a type, period, or method of construction, and is not the work of a master architect. Therefore, HO-11 is ineligible under NRHP/CRHR under Criterion 3.

Finally, the information potential of HO-11 is expressed through the built form and within the historical record. According to the Cultural Resources Report, HO-11 has not yielded, and is not likely to yield, information important to history or precontact history. As such, HO-11 is not eligible for the NRHP/CRHR under Criterion 4.

Overall, while the Bear River North Levee was constructed more than 140 years ago in the late 1870s, the structure has been repaired, extended, and changed on a regular basis. The levee has retained its original location, setting, feeling, and association as a late-19th century levee for agricultural land reclamation; however, the design, workmanship, and materials have been substantially altered by ongoing maintenance and repair activities. Although HO-11 retains some aspects of historic integrity, the levee does not meet the significance criteria necessary for eligibility for either the NRHP or CRHR listings.

HO-12

HO-12 is comprised of four segments of a transmission line, ranging from approximately 0.04-mile long to 0.72-mile long, supported by wooden poles that contain crossarms with electrical distribution lines. The 0.72-mile-long segment of HO-12 appeared along Malone Avenue as early as 1962, with the other three segments appearing circa-1970. Collectively, the four segments are referred to as Transmission Line 01 and/or HO-12.

Transmission Line 01 was constructed using standard methods, and thus, did not provide sufficient power to shape the development of the region. Information contained within the archival records does not suggest that Transmission Line 01 was ever associated with events that made a significant contribution to the broad patterns of Yuba County’s history; thus, HO-12 is not eligible for the NRHP/CRHR under Criterion 1. Similarly, standard local utility crews built and maintained Transmission Line 01; therefore, Transmission Line 01 is not associated with significant historical figures. As such, HO-12 is also not eligible for the NRHP/CRHR under Criterion 2.

As a conventional utility line similar in construction to other utility lines throughout Yuba County, Transmission Line 01 does not embody the distinctive characteristics of a type, period, or method of construction. In addition, Transmission Line 01 does not represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, HO-12 is ineligible for the NRHP/CRHR under Criterion 3.

The information potential of Transmission Line 01 is expressed in the built form, alignment, and within the historical record. According to the Cultural Resources Report, HO-12 has not yielded, and is not likely to yield, information important to history or precontact history. As such, HO-12 is ineligible for the NRHP/CRHR under Criterion 4.

HO-13

HO-13 is comprised of an approximately 0.84-mile-long, 10-foot-wide segment of Malone Avenue. The one-lane dirt road was built circa-1880 by local farmers and ranchers, and thus, conveys the overall aesthetic of a 20th century rural dirt road in Yuba County. The roadway also provides local farms and ranches with vehicular access to the City of Wheatland.

The archival records review conducted as part of the Cultural Resources Report does not suggest that Malone Avenue single-handedly shaped the history of the region surrounding the City of Wheatland. Similarly, the roadway is not associated with events that made a significant contribution to the broad patterns of Yuba County's history. Therefore, HO-13 is ineligible for the NRHP/CRHR under Criterion 1.

As previously noted, local farmers and ranchers built and maintained HO-13 and the rest of the Malone Avenue roadway. However, the archival record does not suggest that HO-13 is associated with the lives of significant historical figures. Therefore, HO-13 is ineligible for the NRHP/CRHR under Criterion 2.

As a conventional, one-lane rural County road lacking character-defining features and indistinguishable from multiple similar roads in Yuba County, HO-13 does not embody the distinctive characteristics of a type, period, or method of construction. In addition, the roadway does not represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity. Given the average nature of the road, HO-13 is ineligible for the NRHP/CRHR under Criterion 3.

The information potential of Malone Avenue is expressed by the built form, alignment, and through the historical record. According to the Cultural Resources Report, HO-13 has not yielded, and is not likely to yield, information important in history or precontact history. As such, HO-13 is ineligible for the NRHP/CRHR under Criterion 4.

Conclusion

Based on the above, the four historic-period resources within the project site identified by the Cultural Resources Report are not eligible for listing as historic resources using the NRHP and CRHR eligibility criteria. Therefore, development of the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines, and a ***less-than-significant*** impact would occur.

Questions 'b' and 'c'

As previously discussed, the project site was subject to extensive grading and clearing activities in 2006. In addition, previous agricultural uses of the project site have resulted in orchard tree root systems infiltrating the site's subsurface, which would compromise the integrity of buried cultural deposits if such deposits occur on-site. A field survey was conducted as part of the Cultural Resources Report to examine the site for surface or subsurface cultural resources. None were observed during the field survey.

Nonetheless, according to the Cultural Resources Report, a relatively high potential for buried pre-contact archaeological resources within the project site would be expected, due to the site's proximity to the Bear River. Additionally, the potential for unrecorded, subsurface archaeological resources, including human remains, to exist within the project site cannot be entirely ruled out. CEQA Guidelines Section 15064.5(f) requires the lead agency for a project to ensure that provisions are made for accidentally discovered resources. In addition, California Health and Safety Code Section 7050.5 and PRC Section 5097.98 require that any human remains discovered within the project site be treated with respect and dignity. Upon discovery of human remains, all work within a minimum of 50 feet of the find must cease immediately, with nothing disturbed and the area secured. The coroner's office of the county where the remains are located must be called, and the coroner has two working days to examine the remains. All parties that discover human remains in California are required to follow a well-defined process. Because previously unknown archaeological resources, including human remains, could exist in the project vicinity, such resources have the potential to be uncovered during ground-disturbing activities at the project site.

Based on the above, the proposed project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5 and/or disturb human remains, including those interred outside of dedicated cemeteries, and a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-16 *Prior to commencement of any construction activities, a Contractor Awareness Training Program shall be delivered to train equipment operators about cultural resources. The program shall be designed to inform construction personnel about: federal and State regulations pertaining to cultural resources and tribal cultural resources; the subsurface indicators of resources that shall require a work stoppage; procedures for notifying the City of Wheatland of any occurrences; project-specific requirements and mitigation measures; and enforcement of penalties and repercussions for non-compliance with the program.*

The training shall be prepared by a qualified professional archaeologist and may be provided either through a brochure, video, or in-person tailgate meeting, as determined appropriate by the archaeologist. The training shall be provided to all construction supervisors, forepersons, and operators of ground-disturbing equipment. All personnel shall be required to sign a training roster. The construction manager is responsible for ensuring that all required personnel *receive the training. The construction manager shall provide a copy of the signed training roster to the City of Wheatland as proof of compliance.*

4.6-17 *Prior to the start of trenching activity, the project applicant shall retain a qualified professional archaeologist to monitor all trenching activities and any below-ground utility installation associated with project construction. Monitoring is not required for placement of equipment or fill inside excavations that were monitored, above-ground construction activities, or redistribution of soils that were previously monitored (such as the return of stockpiles to use in backfilling).*

The monitoring archaeologist shall meet or work under the direct supervision of someone meeting the Secretary of the Interior's professional qualifications standards for prehistoric and historic archaeology. The monitoring archaeologist shall have the authority to temporarily halt ground-disturbing or construction-related work within 100 feet of any discovery of potential historical or archaeological resources in order to address unanticipated discoveries. Proof of compliance with this mitigation measure shall be submitted to the Wheatland Community Development Department.

4.6-18 *The following requirements shall be included through a notation on all project improvement plans prior to the issuance of grading permits and shall be implemented during project construction, to the satisfaction of the City Engineer:*

In the event subsurface deposits believed to be cultural or human in origin are discovered during construction, all work shall halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for precontact and historic archaeologists, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- *If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and agency notifications are not required.*
- *If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the City of Wheatland and applicable landowner. The Office of Historic Preservation (OHP) shall be consulted on a finding of eligibility and appropriate treatment measures shall be implemented, if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines. Appropriate treatment measures that preserve or restore the character and integrity of a find may be, but are not limited to, processing materials for reburial, minimizing handling of historical objects, leaving objects in place within the landscape, construction monitoring of further construction activities, and/or returning objects to a location within the project area where they will not be subject to future impacts. Work shall not resume within the no-work radius until the determination is made through consultation, as appropriate, that the site either: 1) is not a historical resource under CEQA, as defined in Section*

15064.5(a) of the CEQA Guidelines; or 2) that the treatment measures have been completed to the City's satisfaction.

- *If the find includes human remains, or remains that are potentially human, the professional archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the City of Wheatland and the Yuba County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California PRC, and AB 2641 shall be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner shall notify the NAHC, which then shall designate a Native American Most Likely Descendant (MLD) for the proposed project (Section 5097.98 of the PRC). The designated MLD shall have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC shall mediate (Section 5097.94 of the PRC). If an agreement is not reached, the landowner shall rebury the remains where they shall not be further disturbed (Section 5097.98 of the PRC). The burial shall also include either recording the site with the NAHC or the appropriate information center, using an open space or conservation zoning designation or easement, or recording a reinternment document with Yuba County (AB 2641). Work shall not resume within the no-work radius until the City, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.*

4.6.6 ENERGY

Consistent with CEQA Guidelines, Appendix G, Section VI, an impact related to energy is considered significant if the proposed project would:

a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; and/or
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Potential impacts related to questions 'a' and 'b' are discussed further below.

Questions 'a' and 'b'

The main forms of available energy supply are electricity, natural gas, and oil. A description of the 2022 California Green Building Standards Code and the Building Energy Efficiency Standards, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations are provided below.

California Green Building Standards Code

The 2022 California Green Building Standards Code, otherwise known as the CALGreen Code (California Code of Regulations [CCR] Title 24, Part 11) is a portion of the 2022 California Building

Standards Code (CBSC), which became effective on January 1, 2023.[5] The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The CALGreen standards regulate the method of use, properties, performance, types of materials used in construction, alteration repair, improvement and rehabilitation of a structure or improvement to property. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CALGreen Code include, but are not limited to, the following measures:

- Compliance with relevant regulations related to future installation of Electric Vehicle (EV) charging infrastructure in residential and non-residential structures;
- Indoor water use consumption is reduced through the establishment of maximum-fixture water-use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' (DWR) Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory use of low pollutant-emitting interior finish materials, such as paints, carpet, vinyl flooring, and particle board; and
- For all low-rise residential occupancies including single-family homes, duplexes, garden apartments, and other housing types with three or fewer habitable stories developed after January 1, 2020, mandatory on-site solar energy systems capable of producing 100 percent of the electricity demand created by the residence(s).

Building Energy Efficiency Standards

The 2022 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy-efficiency measures from the 2019 Building Energy Efficiency Standards and went into effect January 1, 2023. The 2022 standards provide for additional efficiency improvements beyond the 2019 standards. The proposed project would be subject to all relevant provisions of the most recent update of the CBSC, including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and Building Energy Efficiency Standards would ensure that the proposed structures would consume energy efficiently.

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met through a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment.

All construction equipment and operation thereof would be regulated per the California Air Resources Board's (CARB) In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road

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[5] California Building Standards Commission. *California Green Building Standards Code*. Available at: https://codes.iccsafe.org/content/CAGBC2022P1. Accessed June 2024.

Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. In addition, as a means of reducing emissions, construction vehicles are required to become cleaner through the use of renewable energy resources. The In-Use Off-Road Diesel Vehicle Regulation would, therefore, help to improve fuel efficiency for equipment used in construction of the proposed project. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to further reduce demand on oil and limit emissions associated with construction.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Following implementation of the proposed project, Pacific Gas & Electric Co. would provide electricity and natural gas to the project site. Energy use associated with operation of the proposed project would be typical of residential uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, machinery, refrigeration, appliances, security systems, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by the proposed residential development.

The proposed project would be subject to and adhere to all relevant provisions of the most recent update of the CBSC, including the CALGreen Code and the Building Energy Efficiency Standards, which would ensure efficient energy consumption through the incorporation of such features as efficient water-heating systems, high-performance attics and walls, and high-efficacy lighting. As noted previously, pursuant to the CALGreen Code, residential structures three stories or less must include on-site solar energy systems sufficient to meet 100 percent of the residences' electricity demand.

Additionally, the proposed project would be consistent with the goals of the City's General Plan, such as Policy 8.G.1, which, in addition to energy regulations, encourages new development in the City to incorporate energy efficient design techniques. The proposed project would also comply with the latest CBSC standards regarding energy conservation, renewable energy resources, and green building standards, and thus, would be consistent with Policy 8.G.1.

Conclusion

Based on the above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, a ***less-than-significant*** impact would occur.

4.6.7 GEOLOGY AND SOILS

Consistent with CEQA Guidelines, Appendix G, Section VII, impacts related to geology and soils are considered significant if the proposed project would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42;
    ii. Strong seismic ground shaking;
    iii. Seismic-related ground failure, including liquefaction;
    iv. Landslides;
b) Result in substantial soil erosion or the loss of topsoil;
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
d) Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; and/or
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Potential impacts related to questions ‘a’ through ‘f’ are discussed further below.

Question ‘ai’ and ‘aii’

The City’s General Plan EIR does not identify active faults within the surrounding region, and historical records verify the lack of earth movement in the area. From 1900 to 1976, five events with a Richter magnitude of five or greater occurred in the region, but structural damage was not observed in any event. In addition, surface faulting and rupture exposure in the area is unlikely due to the absence of identified faults and the depth of any alluvial deposits located above bedrock-like material. Ground shaking is similarly unlikely due to the significant distance from the few moderate or greater earthquakes within the past 75 years.

The City is not located within an Alquist-Priolo Earthquake Fault Zone; the closest is within the Bangor Quadrangle, located approximately 27 miles north of the City limits. The City is located in an area rated as a low-intensity earthquake zone (Seismic Zone II), defined by the U.S. Geological Survey (USGS) as an area likely to experience an earthquake measuring a maximum of 5.0 to 5.9 on the Richter scale, and a maximum intensity of VII or VIII on the Modified Mercalli scale. However, the City requires that all construction comply with applicable provisions of the California Building Code (CBC), which ensures that seismically induced ground shaking would not have an adverse effect on structures. Through compliance with all applicable design standards and regulations, the City’s General Plan EIR concludes that development would not expose people or structures to potential seismic events and ground shaking.

Based on the above, a ***less-than-significant*** impact would occur related to substantial adverse effects involving the rupture of a known earthquake fault or strong seismic ground shaking.

Questions 'aiii,' 'aiv,' and 'c'

The proposed project's potential effects related to liquefaction, landslides, lateral spreading, and subsidence/settlement are discussed in detail below.

Liquefaction

Liquefaction is a phenomenon in which saturated, cohesionless soils are subject to a temporary total loss of shear strength due to buildup of pore pressure associated with seismic events. The transformation from solid state to liquid state as a response to seismically induced ground shaking can cause structures supported on the soils to tilt or settle as the supporting capabilities of the soil diminish. Water-saturated, clay-free sediments are generally expected to have a high susceptibility to liquefaction. It should be noted that soils having a high clay content may also be considered to have moderate-to-high liquefaction potential. The City of Wheatland General Plan Background Report identifies a potential for liquefaction because the City is underlain by unconsolidated sands and finer grained materials.[6] Areas found throughout the City could be more susceptible to liquefication during seismic events if perched groundwater conditions are present. Therefore, the potential exists for liquifiable soils to be located on-site.

Landslides

Seismically induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. Land within the City limits is generally flat, including the project site and, as such, would not be subject to landslides.

Lateral Spreading

Lateral spreading is the horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water. Typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. As previously discussed, the City of Wheatland and surrounding area is potentially susceptible to liquefaction. However, substantial slopes and/or open faces do not occur within the project site. Therefore, lateral spreading is not anticipated to occur on the site.

Subsidence/Settlement

Subsidence is downward settling of surface materials caused by natural or artificial removal of underlying support. Land subsidence could occur from various causes, including withdrawal of fluids (oil, gas, or water) or the application of water to moisture- deficient unconsolidated deposits. The potential for collapsible soils to exist is highest in areas underlain by silt and fine sand, particularly where such materials have been deposited by wind. Additionally, settlement results when weak or porous soils (such as fill soils) are compressed during construction activities. According to the City of Wheatland General Plan Background Report, the valley portion of the County, which includes the City and surrounding area, has a low-to-moderate potential for ground surface subsidence that is increased when the potential for liquefaction is high.

Conclusion

Based on the above, further analysis of on-site soil conditions is necessary to ensure that the proposed project would not directly or indirectly cause potential substantial adverse effects involving liquefaction or be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site liquefaction. It should be noted that a Geotechnical Engineering Report was prepared for the project site in December

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[6] City of Wheatland. *City of Wheatland General Plan Background Report*. Adopted July 11, 2006.

2007, which includes a number of recommendations; however, the report does not specifically address the aforementioned issues.[7] Therefore, absent further analysis, a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-19 *Prior to issuance of any grading permits, the project applicant shall submit to the City of Wheatland Engineer, for review and approval, a design-level geotechnical exploration study produced by a California Registered Civil Engineer or Geotechnical Engineer and identify grading and building practices necessary to achieve compliance with the latest adopted edition of the California Building Standards Code's geologic, soils, and seismic requirements. The design-level geotechnical exploration study shall include additional soil borings and sampling, laboratory testing. The design-level geotechnical exploration study shall present the geotechnical engineering conclusions and specific recommendations for site preparation, foundation design, slab support, sound-wall foundations, site drainage, and pavement design. The City Engineer shall ensure that all recommendations specified in the design-level geotechnical exploration study are properly incorporated and utilized in the project design.*

Question 'b'

Development of the proposed project would cause ground disturbance of topsoil related to construction activity. Following development of the site, all exposed soils would be covered with impervious surfaces or landscaping and, thus, the potential for erosion to occur would not exist long-term. In addition, according to the City's General Plan EIR, the City requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) and Erosion Control Plan prior to construction activities and implementation of Best Management Practices (BMPs) during construction. A discussion of SWPPP and Erosion Control Plan requirements is included in Section 4.6.8, Hydrology and Water Quality, of this chapter. The erosion control measures required by both the SWPPP and Erosion Control Plan would ensure that the proposed project does not result in substantial erosion or the loss of topsoil, and a ***less-than-significant*** impact would occur.

Question 'd'

Expansive soils can undergo significant volume changes with changes in moisture content. Specifically, such soils shrink and harden when dried and expand and soften when wetted. If structures are underlain by expansive soils, foundation systems must be capable of withstanding the potential damaging movements of the soil.

The City's General Plan EIR concluded that impacts related to expansive soils can be reduced to a less-than-significant level through engineering tests to determine the proper design criteria. For example, roadways and sidewalks in areas of clayey soils should be designed in consideration of the estimated degree of soil contraction, expansion, and settlement potential, according to testing standards provided by the CBSC. Therefore, General Plan Policies 9.B.1, 9.B.2, and 9.B.3 require the following: preparation of a soils engineering and geologic-seismic analysis prior to granting

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[7] Wallace Kuhl & Associates, Inc. *Geotechnical Engineering Report: Heritage Oaks Estates East Infrastructure*. December 6, 2007.

development permits in areas prone to geological or seismic hazards; submission of a preliminary soils report based upon adequate test borings for every major subdivision; and compliance with the current edition of the CBC.

In accordance with the foregoing General Plan policies, a Geotechnical Engineering Report was prepared for the project site in December 2007.[8] According to the Geotechnical Engineering Report, laboratory testing of the near surface clays and silts on-site indicated that on-site soils could exert moderate expansion pressures on foundations and exterior flatwork. Therefore, the Geotechnical Engineering Report provides specific recommendations to ensure impacts related to soil expansion do not occur.

Without compliance with the recommendations contained within the site-specific Geotechnical Engineering Report, the proposed project could be located on expansive soil, creating substantial direct or indirect risks to life or property, and a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-20 Implement Mitigation Measure 4.6-19.

Question 'e'

The proposed project would connect to existing City sewer services. Thus, septic tanks or other alternative wastewater disposal systems are not included as part of the project, and ***no impact*** related to the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

Question 'f'

Paleontological resources are the remains or traces of prehistoric animals and plants. The potential paleontological importance of a site can be assessed by identifying the paleontological importance of exposed rock units within an area. According to the City's General Plan EIR, only a portion of the City's General Plan planning area has been surveyed, and thus, unknown significant paleontological resources could be uncovered during future ground-disturbing activities associated with development. Because the proposed project would be constructed in areas where surveys have not taken place, impacts to unidentified paleontological resources during ground-disturbing activities associated with the proposed project could occur.

Based on the above, the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, and a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-21 Should paleontological resources be discovered during ground-disturbing activities, work shall be halted in the area within 50 feet of the find. The City of

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[8] Wallace Kuhl & Associates, Inc. *Geotechnical Engineering Report: Heritage Oaks Estates East Infrastructure*. December 6, 2007.

> *Wheatland Community Development Department shall be notified and a qualified paleontologist shall be retained to inspect the discovery. If deemed significant under criteria established by the Society for Vertebrate Paleontology with respect to authenticity, completeness, preservation, and identification, the resource(s) shall then be salvaged and deposited in an accredited and permanent scientific institution (e.g., University of California Museum of Paleontology [UCMP]), where the discovery would be properly curated and preserved for the benefit of current and future generations. Construction may continue in areas outside of the buffer zone. The language of this mitigation measure shall be included on any future grading plans, utility plans, and improvement plans approved by the City of Wheatland Community Development Department for the proposed project, where ground-disturbing work would be required.*

4.6.8 HAZARDS AND HAZARDOUS MATERIALS

Consistent with CEQA Guidelines, Appendix G, Section IX, an impact related to hazards and hazardous materials is considered significant if the proposed project would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment;
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; and/or
g) Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires.

Potential impacts related to questions ‘a’ through ‘g’ are discussed further below.

Question ‘a’

The proposed project would include the development of a single-family residential subdivision. Residential developments are not typically associated with the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. On-site maintenance may involve the use of common household cleaning products, fertilizers, and herbicides, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Due to the regulations governing use of such products and the amount anticipated to be used on the site, routine use of such products would not represent a substantial risk to public health or the environment. Therefore, operations of the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Construction activities associated with implementation of the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. The project contractor is required to comply with all California Health and Safety Codes and local County ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. Pursuant to California Health and Safety Code Section 25510(a), except as provided in subdivision (b), the handler or an employee, authorized representative, agent, or designee of a handler, must, upon discovery, immediately report any release or threatened release of a hazardous material to the unified program agency (in the case of the proposed project, the Yuba County Environmental Health Department [YCEHD]) in accordance with the regulations adopted pursuant to Section 25510(a). The handler or an employee, authorized representative, agent, or designee of the handler must provide all State, City, or County fire, public health, or safety personnel and emergency response personnel with access to the handler's facilities. In the case of the proposed project, the contractors are required to notify the YCEHD in the event of an accidental release of a hazardous material, who would then monitor the conditions and recommend appropriate remediation measures.

Based on the above, the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

Question 'b'

A development project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment should a site contain potential Recognized Environmental Conditions (RECs) that are not properly addressed prior to project implementation. A REC indicates the presence or likely presence of any hazardous substances in, on, or at a property due to any release into the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment.

Based on historic aerial photographs, the project site was previously used as agricultural land from at least 1993 until approximately 2006. As a result, the potential exists that organochlorine pesticides (OCPs) and arsenic pesticide residues may be present within surface soils. If such materials are present in on-site soils, ground-disturbing activities associated with project construction could expose workers to adverse health effects associated with hazardous materials.

In addition, according to the aerial photographs, an unidentified structure was located within the project site from at least 1993 until 2006. Therefore, while the structure was removed from the site in approximately 2006, residual asbestos-containing materials (ACMs) and lead-based paints (LBPs) may be present within the areas of former structures. The potential presence of ACMs and lead contamination is considered a REC. During ground-disturbing activities associated with the proposed project, construction workers could come into contact with, and be exposed to, ACMs or LBP materials present in the on-site soils associated with the former structures. Additionally, workers could potentially be exposed to elevated concentrations of lead in the soil in the vicinity of the structures. Collection and disposal of such hazardous materials by untrained personnel could cause asbestos and lead dust emissions to be transported off-site, resulting in the release of hazardous material into the environment.

In addition to the existing well in the northern portion of the site that would be improved to be used as a production well for the proposed project, two groundwater wells have been previously identified within the project site, the first near the oak trees in the southern portion of the site and the second adjacent to the Bear River levee in approximately the same area of the site. Although both wells are expected to have been abandoned when the site was mass graded in 2006, abandonment has not been confirmed. The well locations are in areas of the site proposed to remain as open space and are not anticipated to be developed or disturbed. However, if the wells are present and encountered during construction activities, the proposed project could create a significant hazard to the public or environment related to unauthorized access, safety hazards to humans and animals, illegal disposals of waste in the wells, and/or the release of potential contaminants contained in the wells. Thus, the wells should be properly abandoned in order to avoid any such potential hazards.

Based on the above, potentially hazardous conditions could occur if pesticide residues are present in on-site soils or if hazardous materials associated with former structures or wells are present on-site and are not removed in accordance with County and State regulations. Therefore, the proposed project could create a significant hazard to the public or the environment, and a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-22 *Prior to approval of grading permits, the project applicant shall ensure that additional testing of on-site soils is conducted for the presence of organochlorine pesticides (OCPs), asbestos-containing materials (ACMs) and lead-based paints (LBPs) to determine both the lateral and vertical extent of the potential contamination. Soil samples shall be collected in areas previously used for agricultural purposes for the testing of OCPs, and in areas associated with the previous unidentified structure for the testing of ACMs and LBPs. The testing shall be conducted in accordance with U.S. Environmental Protection Agency (USEPA) Method 8081A for OCPs, USEPA Method 600/R-93/116 for ACMs, and USEPA Method 6010B for lead. Where the concentrations exceed the applicable California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Screening Levels, the soil shall be excavated, and that portion of material may be transported, and disposed of off-site at an appropriate Class I or Class II facility permitted by DTSC, or other options implemented as deemed satisfactory to Yuba County Environmental Health Department (YCEHD) and/or DTSC. The results of soil sampling and analysis, as well as verification of proper remediation and disposal, shall be submitted to the City of Wheatland Community Development Department for review and approval. Any remediation shall be completed prior to acceptance of the site improvements.*

4.6-23 *Prior to improvement plan approval, the project applicant shall hire a licensed well contractor to obtain a well abandonment permit from the YCEHD for all on-site wells not proposed for use, and properly abandon the on-site wells, pursuant to Department of Water Resources Bulletin 74-81 (Water Well Standards, Part III). A report verifying abandonment of the on-site wells in compliance with Bulletin 74-*

81 shall be submitted for review and approval to the YCEHD and City of Wheatland Community Development Department.

Question 'c'

The nearest school to the project site is Wheatland Union High School, located approximately 1,000 feet to the northwest of the site between Wheatland Road and Roddan Lane. Therefore, the proposed project would be located within 0.25-mile of an existing school. However, as discussed above, construction activities associated with development of the proposed project would be required to comply with all California Health and Safety Codes and local County ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. Specifically, California Health and Safety Code Section 25510(a) requires the handler or an employee, authorized representative, agent, or designee of a handler, to immediately report any release or threatened release of a hazardous material to the unified program agency. The handler or an employee, authorized representative, agent, or designee of the handler must provide all State, City, or County fire, public health, or safety personnel and emergency response personnel with access to the handler's facilities. In the case of the proposed project, the contractors would be required to notify the YCEHD in the event of an accidental release of a hazardous material, who would then monitor the conditions and recommend appropriate remediation measures. In addition, as established by Mitigation Measure 4.6-22, additional testing of on-site soils would be conducted prior to approval of grading permits to ensure that any potential contamination related to OCPs, ACMs, and/or LBPs is identified and remediated in accordance with applicable federal, State, and local regulations to the satisfaction of the YCEHD. Thus, project construction would not result in substantial adverse effects related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within 0.25-mile of the Wheatland Union High School. In addition, due to the residential nature of the proposed project, project operation would similarly not result in any substantial adverse effects.

Based on the above, while the project site is located within 0.25-mile of Wheatland Union High School, the proposed project would not result in substantial adverse effects related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste. Thus, a ***less-than-significant*** impact would occur.

Question 'd'

Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to annually develop an updated Cortese List. The project site is not located on the DTSC's Hazardous Waste and Substances Site List, which is a component of the Cortese List.[9] The project site is also not located on the State Water Resources Control Board's (SWRCB) GeoTracker database, which is another portion of the Cortese List and identifies leaking underground storage tank (LUST) sites.[10] Furthermore, the project site is not located on or near any hazardous waste sites identified on the list of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) from the SWRCB.[11]

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[9] Department of Toxic Substances Control. *EnviroStor.* Available at: https://www.envirostor.dtsc.ca.gov/public/search.asp. Accessed May 2023.

[10] California Environmental Protection Agency. *GeoTracker.* Available at: https://geotracker.waterboards.ca.gov/search. Accessed May 2023.

[11] State Water Resources Control Board. *Active CDO and CAO.* Available at: https://calepa.ca.gov/sitecleanup/corteselist/. Accessed May 2023.

Based on the above, the proposed project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and ***no impact*** would occur.

Question 'e'

As detailed in Map 1 and Map 5 of the Beale Air Force Base Land Use Compatibility Plan (BAFBLUCP), the project site is located within Review Area 2, which encompasses the airspace protection surfaces and Recorded Overflight Notification Area, as well as the Airport Influence Area.[12] According to Table 1 in the BAFBLUCP, exterior noise exposure over Community Noise Equivalent Level (CNEL) 60 dB for single-family residential uses is considered incompatible. However, according to Map 2, the project site is not located within any noise impact zones, and therefore, would not be affected. Additionally, the project site is not located within any of Beale's Safety Zones. Therefore, the proposed project would not be subject to Beale's safety compatibility criteria.

Based on the above, the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area, and a ***less-than-significant*** impact would occur.

Question 'f'

The City of Wheatland does not currently have an official emergency response plan or emergency evacuation plan. However, Yuba County adopted an Emergency Operations Plan (EOP) in August 2015.[13] The EOP describes the County's emergency management organization, provides a brief overview of the hazards faced in the County, and is intended to be general in its application and provide for flexibility during response and recovery. During construction of the proposed project, all construction equipment would be staged on-site to prevent obstruction of local and regional travel routes in the City that could be used as evacuation routes during emergency events. During project operation, the proposed project would not substantially alter the existing circulation system in the surrounding area, would provide adequate access for emergency vehicles, and would not interfere with potential evacuation or response routes used by emergency response teams. As a result, the proposed project would have a ***less-than-significant*** impact related to impairing or physically interfering with an adopted emergency response plan or emergency evacuation plan.

Question 'g'

Issues related to wildfire hazards are discussed in Section 4.6.15, Wildfire, of this chapter. As noted therein, the project site is not located within a Very High, High, or Moderate Fire Hazard Severity Zone (FHSZ). Therefore, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, and a ***less-than-significant*** impact would occur.

4.6.9 HYDROLOGY AND WATER QUALITY

Consistent with CEQA Guidelines, Appendix G, Section X, an impact to hydrology and water quality is considered significant if the proposed project would:

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[12] Sacramento Area Council of Governments. *Beale Air Force Base Land Use Compatibility Plan*. Available at: https://www.sacog.org/post/yuba-county. Accessed June 2024.

[13] Yuba County. *County of Yuba Emergency Operations Plan: All-Hazards*. Adopted August 2015.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    i. Result in substantial erosion or siltation on- or off-site;
    ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    iv. Impede or redirect flood flows;
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and/or
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

It should be noted that question 'ciii' is discussed in Chapter 4.5, Utilities and Service Systems, of this EIR. Potential impacts related to the remaining questions are discussed below.

Question 'a'

Soils exposed by ground-disturbing activities have the potential to affect water quality in two ways: 1) suspended soil particles and sediments transported through runoff; or 2) sediments transported as dust that eventually reach local water bodies. Spills or leaks from heavy equipment and machinery, staging areas, or building sites also have the potential to enter runoff. Typical pollutants include, but are not limited to, petroleum and heavy metals from equipment and products such as paints, solvents, and cleaning agents, which could contain hazardous constituents. Sediment from erosion of graded or excavated surface materials, leaks or spills from equipment, or inadvertent releases of building products could result in water quality degradation if runoff containing the sediment or contaminants should enter receiving waters in sufficient quantities. Discharge of polluted stormwater or non-stormwater runoff could violate waste discharge requirements. However, in general, impacts from construction-related activities would generally be short-term and of limited duration.

Water quality degradation is regulated by the federal National Pollutant Discharge Elimination System (NPDES) Program, established by the Clean Water Act, which controls and reduces pollutants to water bodies from point and non-point discharges. In California, the NPDES permitting program is administered by the SWRCB through nine Regional Water Quality Control Boards (RWQCBs). New development within the City that disturbs one or more acres of land is required to comply with the NPDES Construction General Permit and prepare a SWPPP incorporating BMPs to control sedimentation, erosion, and hazardous materials contamination of runoff during construction. The proposed project would disturb approximately 148.7 acres, and would, thus, be subject to the NPDES Construction General Permit conditions.

Pursuant to the requirements, a SWPPP would be prepared for the overall project, which would include the site map, drainage patterns and stormwater collection and discharge points, BMPs, and a monitoring and reporting framework for implementation of BMPs, as necessary. In addition, a Notice of Intent (NOI) would be filed with Central Valley RWQCB. Development of the SWPPP would include plans to treat stormwater runoff in accordance with the standards of the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment. In addition, Wheatland Municipal Code Section 15.05.160 requires that erosion control measures be implemented in accordance with applicable federal, State, and local regulations, which would include compliance with the NPDES Program.

Non-stormwater management and material management controls reduce non-sediment-related pollutants from potentially leaving the construction site to the extent practicable. The Construction General Permit prohibits the discharge of materials other than stormwater and authorized non-stormwater discharges (such as irrigation and pipe flushing and testing). Non-stormwater BMPs tend to be management practices with the purpose of preventing stormwater from coming into contact with potential pollutants. Examples of non-stormwater BMPs include preventing illicit discharges, and implementing good practices for vehicle and equipment maintenance, cleaning, and fueling operations, such as using drip pans under vehicles. Waste and materials management BMPs include implementing practices and procedures to prevent pollution from materials used on construction sites. Examples of materials management BMPs include the following:

- Good housekeeping activities such as storing of materials covered and elevated off the ground, in a central location;
- Securely locating portable toilets away from the storm drainage system and performing routine maintenance;
- Providing a central location for concrete washout and performing routine maintenance;
- Providing several dumpsters and trash cans throughout the construction site for litter/floatable management; and
- Covering and/or containing stockpiled materials and overall good housekeeping on the site.

While the final materials management BMPs to be used during construction of the proposed project are currently unknown, the project would likely include a combination of the BMP examples listed above. Final BMPs for the proposed project construction would be chosen in consultation with the CASQA Stormwater BMP Handbook for New Development and Redevelopment, and implemented by the project contractor.

In accordance with the Construction General Permit, the project site would also be inspected during construction before and after storm events and every 24 hours during extended storm events in order to identify maintenance requirements for the implemented BMPs and to determine the effectiveness of the implemented BMPs. As a “living document,” the site-specific SWPPP that would be prepared for the proposed project would be modified as construction activities progress. A Qualified SWPPP Practitioner (QSP) would ensure compliance with the SWPPP through regular monitoring and visual inspections during construction activities. The QSP for the project would amend the SWPPP and revise project BMPs, as determined necessary through field inspections, to protect against substantial erosion or siltation on- or off-site.

Compliance with the State’s Construction General Permit, Wheatland Municipal Code Section 15.05.160, CASQA Stormwater BMP Handbook for New Development and Redevelopment, and all applicable local, State, and federal requirements would minimize the potential degradation of stormwater quality and downstream surface water associated with construction of the proposed project. However, because a SWPPP has not yet been prepared for the proposed project, proper compliance with the aforementioned regulations cannot be ensured at this time, and the proposed project's construction activities could violate water quality standards or waste discharge requirements or otherwise degrade water quality.

During project operation, typical pollutants would include nutrients, oil and grease, metals, organics, pesticides, bacteria, sediment, trash, and other debris. Examples of nutrients that could be present in post-construction stormwater include nitrogen and phosphorous resulting from fertilizers applied to landscaping. Excess nutrients could affect water quality by promoting excessive and/or a rapid growth of aquatic vegetation, which reduces water clarity and results in oxygen depletion. Pesticides, which are toxic to aquatic organisms and can bioaccumulate in larger species, such as birds and fish, can potentially enter stormwater after application to landscaped areas. Oil and grease could enter stormwater from vehicle leaks, traffic, and maintenance activities. Metals could enter stormwater as surfaces corrode, decay, or leach. Clippings associated with landscape maintenance and street litter could be carried into storm drainage systems. Pathogens (from pets, wildlife, and human activities) have the potential to affect downstream water quality.

The proposed project would be required to comply with the City's Unregulated Small Traditional Phase II MS4 Permit to control for stormwater runoff during project operation. As part of compliance, the proposed project would include installation of an underground trunk line conveyance system to convey flows from new impervious surfaces within the project site to the proposed detention basins located in the northern portion of the site. The project would include two trunk lines, which would vary in diameter from 33 inches to 72 inches. From new impervious surfaces, stormwater flows would be collected by drain inlets and conveyed either from the easterly trunk line to the westerly trunk line, or directly to the westerly trunk line, with the exception of Villages 5 and 6. From the westerly trunk line, flows would be conveyed for detention and treatment to the easterly and westerly detention basins, which would be located to the east and west of Malone Avenue, respectively. The east detention basin would have a storage capacity of 10.9 acre-feet (AF) at its rim elevation of 80.3 feet. The west detention basin would have a storage capacity of 53.1 AF at its rim elevation of 80.3 feet. The detention basins would be connected by way of a 48-inch storm drain line. From the west detention basin, peak flows would be metered to Grasshopper Slough through a gravity outfall structure. The outfall would be equipped with a flap gate at the slough to prevent backflow from the slough to the pond. Because a portion of the west detention basin would be below the invert of the adjacent Grasshopper Slough, a small five-cubic-feet-per-second pump would be installed to discharge water into the slough. The storm drain lines and outfall structure would be sized to adequately handle any increase in stormwater from the site prior to discharge, in accordance with applicable regulations, including the provisions set forth by the City's Unregulated Small Traditional MS4 Permit. However, because a final BMP and water quality maintenance plan has not been prepared, incorporation of proper source control measures cannot be ensured at this time.

Based on the above, the proposed project could violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality and a ***significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-24 *Prior to issuance of any grading permits, the contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) for review and approval by the Central Valley Regional Water Quality Control Board (RWQCB). The contractor shall file the Notice of Intent (NOI) and associated fee to the State Water Resources Control Board (SWRCB). The SWPPP shall serve as the framework for identification, assignment, and implementation of Best Management Practices (BMPs). The contractor shall implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable. Construction (temporary) BMPs for the project may include, but are not limited to: fiber rolls, straw bale barrier, straw wattles, storm drain inlet protection, velocity dissipation devices, silt fences, wind erosion control, stabilized construction entrance, hydroseeding, revegetation techniques, and dust control measures. The SWPPP shall be submitted to the City Engineer for review and approval and shall remain on the project site during all phases of construction. Following implementation of the SWPPP, the contractor shall subsequently demonstrate the SWPPP's effectiveness and provide for necessary and appropriate revisions, modifications, and improvements to reduce pollutants in stormwater discharges to the maximum extent practicable.*

4.6-25 *Prior to approval of final project improvement plans, a detailed BMP and water quality maintenance plan shall be submitted to the City Engineer for review and approval. The BMP and water quality maintenance plan shall meet the standards of the City's Unregulated Small Traditional MS4 Permit, and the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for New Development and Redevelopment. Site design measures, source control measures, hydromodification management, and Low Impact Development (LID) standards, as necessary, shall be incorporated into the design and shown on the improvement plans.*

Questions 'b' and 'e'

The project site is located within the South Yuba Subbasin, a part of the Sacramento Valley Groundwater Basin. The South Yuba Subbasin is bounded on the north by the Yuba River, which separates the South Yuba Subbasin from the North Yuba Subbasin, on the west by the Feather River, on the south by the Bear River, and on the east by the Sierra Nevada. The City of Wheatland provides water to the entire City solely from groundwater. Water service would be provided to the proposed project through the existing well located in the site's 0.86-acre Parcel B, as well as through new connections to existing water supply lines in the project vicinity. However, the proposed project is not anticipated to substantially decrease groundwater supplies, such that the project would impede sustainable groundwater management of the basin, as, according to DWR Bulletin 118-80, the South Yuba Subbasin is not considered to be in overdraft. In addition, groundwater levels in the subbasin are continuing to increase to near historic high elevations due to increasing surface water used in the City for irrigation and reduced groundwater pumping.

With respect to groundwater recharge, as previously discussed, stormwater runoff from new impervious surfaces within the project site would be conveyed to the two detention ponds located in the northern portion of the site. From the ponds, flows would either percolate into underlying soils or would be discharged to Grasshopper Slough where flows could infiltrate into the ground. Thus, the proposed project would not interfere substantially with groundwater recharge.

Groundwater within the South Yuba Subbasin is managed by the Yuba Water Agency, which has adopted the Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan (Yuba Subbasins GSP).[14] According to the Yuba Subbasins GSP, regional groundwater quality in the Yuba Subbasins is considered good to excellent for municipal, domestic, and agricultural uses, and reduced pumping generally ensures that the long-term average demand remains at or below the sustainable yield. Overall, the City has found that water supply is not a limiting factor for new development. Although the proposed project includes a General Plan Amendment to allow for a higher-density land use designation, the project site has already been generally anticipated for residential development by the City. As such, the project would not result in a substantially increased use of groundwater supplies beyond what has been anticipated by the City.

Based on the above, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the subbasin. In addition, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, a ***less-than-significant*** impact would occur.

Question 'ci' and 'cii'

The proposed project would alter the existing drainage pattern of the site through increasing the amount of impervious surface within the site as compared to the site's existing undeveloped condition. As discussed under question 'a' above, with implementation of Mitigation Measures 4.6-24 and 4.6-25, the proposed project would incorporate BMPs during project construction to prevent erosion and siltation. During project operation, site design measures, source control measures, hydromodification management, and Low Impact Development (LID) standards would be implemented, which would prevent substantial erosion or siltation from occurring on- or off-site.

With respect to the proposed project's effect on the rate or amount of surface runoff, as discussed further under Impact 4.5-5 in the Utilities and Service Systems chapter of this EIR, post-development flows from the proposed project for the 10-year, 25-year, and 100-year storm events would be less than the existing flows into Grasshopper Slough. In addition, as shown in Table 4.5-5 of this EIR, post-construction discharges to Grasshopper Slough would not result in increases to the slough's water surface elevation.

Based on the above, the proposed project would not result in substantial erosion or siltation, and would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding. Therefore, a ***less-than-significant*** impact would occur.

Question 'civ'

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 06115C0445D, the central area of the site is located within an Area with Reduced Flood Risk due to levee (Zone X), and the remaining portions of the project site are located within a Special Flood Hazard Area (SFHA) Without Base Flood Elevation (BFE) (Zone A).[15] The Zone A areas associated with Grasshopper Slough are located in the north and western-central portions of the site (see Figure 4.6-2).

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[14] Cordua Irrigation District, Yuba Water Agency, City of Marysville. *Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan.* December 2019.

[15] Federal Emergency Management Agency. *Flood Insurance Rate Map 06077C0465F.* Effective October 16, 2009.

The Zone A SFHA associated with Bear River is located outside the project boundaries to the south; however, the proposed project would not involve any development or disturbance within the SFHA. The proposed project would preserve 2.83 acres of open space at the southern portion of the project site, which would provide a buffer between the proposed development and the SFHA.

The northern portion of the site within Zone A would be developed with two multi-use stormwater facilities. Both facilities would act as stormwater detention basins for treatment and hydromodification sufficient to handle stormwater from all on-site impervious areas. Single-family residences are proposed within the western-central portion of the project site that is identified as a SFHA without BFE measurements. Given that portions of the project site proposed for development are located within a SFHA, the proposed project could be exposed to risks associated with flood hazards. Wheatland Municipal Code Chapter 15.20 establishes standards for development within floodplains. Development within the portions of the project site located within Zone A would be subject to all relevant restrictions set forth within Chapter 15.20 of the City's Municipal Code. Without compliance with such standards, development of the proposed project could result in a ***significant*** impact related to impeding or redirecting flood flows.

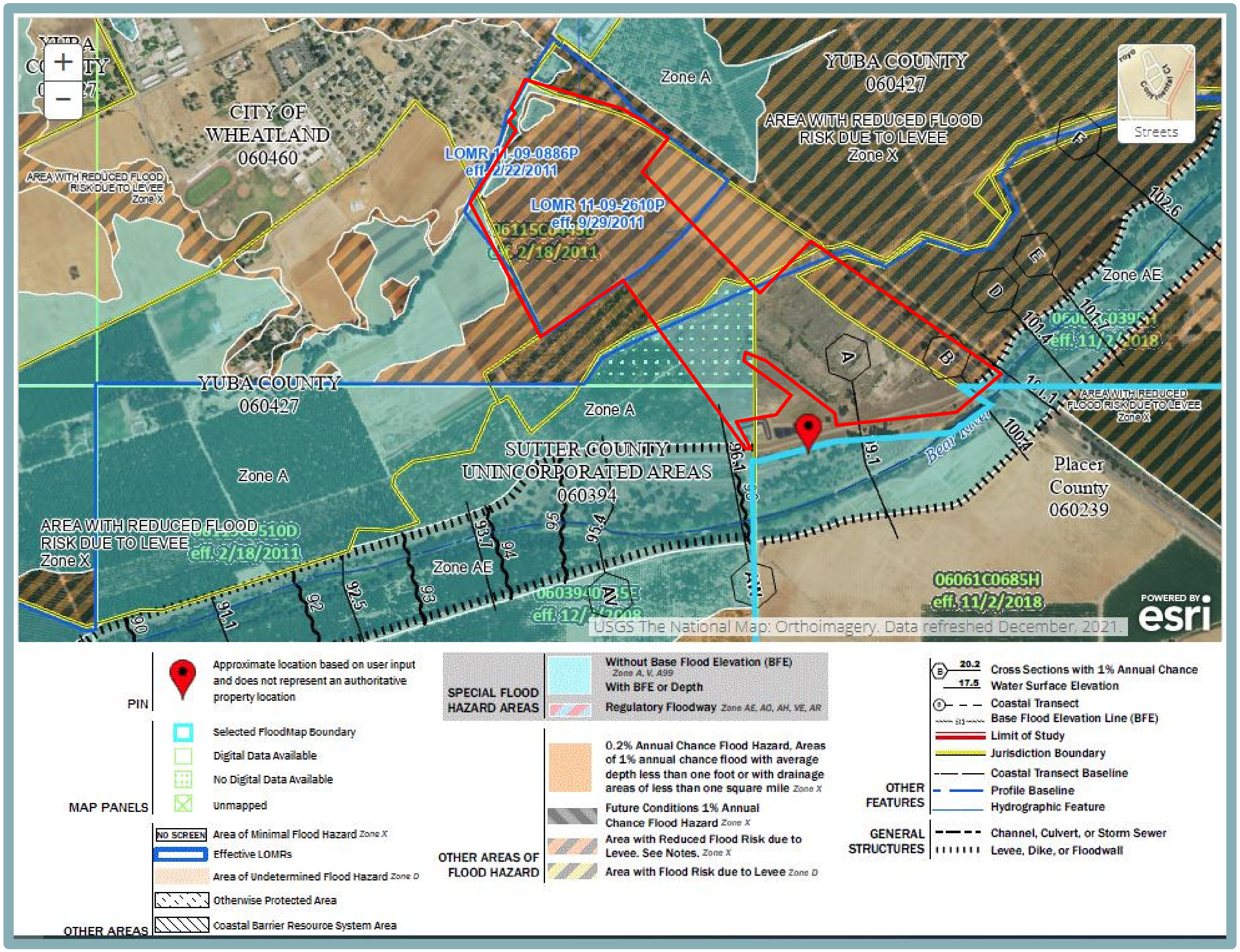
Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

4.6-26 *Prior to construction of the foundation or at the completion of final grading, whichever comes first, project improvement plans shall show that all finished building pad elevations at the site shall be a minimum of one foot above the 100-year BFE, in accordance with Section 15.20.150 of the City of Wheatland Municipal Code. Project improvement plans shall be submitted to the City Engineer for review and approval. The final pad elevation shall be certified by a California registered civil engineer or licensed land surveyor and submitted to the City Engineer and Floodplain Manager for review and approval. Building construction shall not occur until the certification has been received and approved. Benchmark elevation and location shall be shown on the improvement plans to the satisfaction of the City of Wheatland Engineering Department.*

4.6-27 *Prior to issuance of building permits, a Hydrology Study must be submitted to the City Engineer demonstrating the project's compliance with all relevant sections of the City's Municipal Code and applicable federal standards (such as those established by FEMA). Compliance with FEMA standards may include obtaining a Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Revision based on Fill (CLOMR-F) for fill within a Special Flood Hazard Area, if required. A copy of the letter shall be provided to the Engineering and Surveying Division. A Letter of Map Revision (LOMR), or a Letter of Map Revision based on Fill (LOMR-F) from FEMA shall be submitted to the City's Engineer prior to acceptance of project improvements as complete.*

Figure 4.6-2
FEMA FIRM 06115C0445D



Question 'd'

A seiche is defined as a wave generated by rapid displacement of water within a reservoir or lake, due to an earthquake that triggers land movement within the water body or land sliding into or beneath the water body. The project site is not located within the vicinity of a large closed body of water such as a lake or reservoir that could be subject to seiches, and is not located near a coastline, which precludes vulnerabilities to tsunami hazards. As discussed above, FEMA designates portions of the project site as located within an SFHA. However, Mitigation Measures 4.6-24, and 4.6-25 would reduce potential flood impacts to a less-than-significant level. Therefore, the proposed project would not release pollutants due to project inundation, and a ***less-than-significant*** impact would occur.

4.6.10 LAND USE AND PLANNING

Consistent with CEQA Guidelines, Appendix G, Section XI, an impact related to land use and planning is considered significant if the proposed project would:

a) Physically divide an established community; and/or
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Potential impacts related to questions 'a' and 'b' are discussed further below.

Question 'a'

A project risks dividing an established community if the project would introduce infrastructure or alter land uses so as to change the land use conditions in the surrounding community, or isolate an existing land use. The project site is currently vacant and undeveloped, and is bordered by single-family residences to the north and northeast; SR 65 and undeveloped land to the east; a portion of the Bear River and the City's wastewater treatment plant (WWTP) to the south; and Malone Avenue, undeveloped land, and agricultural land to the west. The project site is currently designated as LDR and Park. Although the proposed project includes a General Plan Amendment to allow for a higher-density land use designation, the project site has already been generally anticipated for residential development by the City. Therefore, the proposed project would not alter the land use of the site such that land use conditions would be changed in the surrounding community. In addition, the proposed project would include a multimodal network for pedestrians and bicyclists by way of the Malone Paseo trail corridor and SR 65 landscape corridor. Malone Paseo would provide an internal north-to-south connection between the proposed residential units along Malone Avenue. The corridor would include a 10-foot-wide meandering pathway for pedestrian and bicycle uses, and a landscape strip along one street edge. Sidewalk connections would also be provided throughout the site's internal roadway network. The proposed project would also include a new roadway connection from SR 65 to Bishop Pumpkin Farm. Thus, the project would improve connectivity in the project vicinity and, therefore, would not isolate an existing land use.

Based on the above, the proposed project would not physically divide an established community, and a ***less-than-significant*** impact would occur.

Question 'b'

The City of Wheatland General Plan designates the site as LDR and Park, and the project site is zoned PD. Due to the project's proposed lot sizes, the proposed project would require approval of a General Plan Amendment to change the site's designation from LDR to LMDR and MDR.

The proposed project would be required to comply with all applicable development standards included in the General Plan associated with the LDR, LMDR, and MDR land use designations, such as allowed density and floor-area-ratio (FAR) requirements.

In 2005, the project area was rezoned to PD; however, specific development standards were not adopted as part of that rezone. Therefore, the proposed project would also require approval of a Rezone to amend the existing PD zoning district and establish site-specific development standards. Pursuant to Section 18.51.060 of the Wheatland Municipal Code, the uses within the PD zoning district shall be limited to the uses contained within the approved development plan and pre-existing uses, as defined by Chapter 18.70 of the Municipal Code. Accordingly, the proposed Heritage Oaks Wheatland General Development Plan has been prepared to establish the design standards for the site, with specific criteria to assist the City in its review of the proposed project. Unless otherwise specified within the General Development Plan, such as variations in lot sizes and setback lengths, the proposed project would adhere to all applicable City zoning and Municipal Code requirements. Such standards and regulations are designed to reflect site characteristics, as well as establish development and design objectives that differ from the City's typical development standards for the proposed on-site uses.

Overall, the proposed project would be generally consistent with Municipal Code standards and General Plan policies, as well as other applicable policies and regulations adopted for the purpose of avoiding or mitigating environmental effects. For example, in compliance with General Plan Policies 7.D.1 and 7.D.2, a Cultural Resources Report was prepared to evaluate potential impacts that could occur to historical and archaeological resources as a result of project construction. To ensure that impacts are reduced to a less-than-significant level, the proposed project would be subject to Mitigation Measures 4.6-15 through 4.6-17, which include provisions that would be implemented in the event that unknown archaeological resources and human remains are discovered. In addition, the proposed project would be consistent with General Plan Policies 8.B.6 and 8.B.7, related to protection of biological resources, as the project would be subject to Mitigation Measures 4.6-1 through 4.6-12, which include requirements for preventing potential impacts to various protected species. The project would also be subject to Mitigation Measures 4.6-13 and 4.6-14, which include provisions for preventing impacts to Sensitive Natural Communities and on-site trees.

Based on the above, the proposed project would not cause a substantial adverse environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and a ***less-than-significant*** impact would result.

4.6.11 MINERAL RESOURCES

Consistent with CEQA Guidelines, Appendix G, Section XII, an impact to mineral resources is considered significant if the proposed project would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State; and/or
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Question 'a' and 'b'

As discussed under Impact 4.10-1 of the City's General Plan EIR, the Yuba County General Plan Environmental Setting and Background Report concluded that mineral resources, including precious metals, copper, zinc, Fullers earth, sand and gravel, and crushed stone, are present in the County. However, the City is located outside of the recognized Mineral Land Classification Area. Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan, and ***no impact*** would occur.

4.6.12 POPULATION AND HOUSING

Consistent with CEQA Guidelines, Appendix G, Section XIX, an impact related to population and housing is considered significant if the proposed project would:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of major roads or infrastructure); and/or
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

Potential impacts related to questions ‘a’ and ‘b’ are discussed further below.

Question ‘a’

The proposed project would include the development of up to 685 single-family residential units. According to the General Plan, the City of Wheatland’s has an average of 2.4 persons per household. Therefore, the proposed project would increase the City’s population by approximately 1,644 additional residents (685 units x 2.4 persons per household = 1,644 new residents). The project site is currently designated as LDR and Park. Although the proposed project includes a General Plan Amendment to allow for a higher-density land use designation, the project site has already been generally anticipated for residential development by the City. Thus, any increase in residents generated by the project beyond what was anticipated by the City’s General Plan would represent only an incremental increase. In addition, the Wheatland General Plan anticipated population growth from approximately 3,178 in 2004 to 30,100 by 2025. According to the U.S. Census Bureau, the City’s current population is 3,712.[16] Thus, the residents generated by the proposed project would not result in the City exceeding the 2025 population total anticipated by the General Plan. Lastly, as discussed further in Chapter 4.5, Utilities and Service Systems, of this EIR, the proposed infrastructure improvements would be sized to accommodate only the proposed project.

Based on the above, the proposed project would not induce substantial unplanned population growth either directly or indirectly, and a ***less-than-significant*** impact would occur.

Question ‘b’

The project site is currently undeveloped and vacant. The proposed project would not require demolition of any residential uses or inhabited structures. As such, the proposed project would not displace substantial numbers of existing people or housing, requiring the construction of replacement housing elsewhere, and ***no impact*** would occur.

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[16] U.S. Census Bureau. *Wheatland city, California*. Available at: https://data.census.gov/profile/Wheatland_city,_California?g=160XX00US0685012. Accessed June 2024.

4.6.13 PUBLIC SERVICES

Consistent with CEQA Guidelines, Appendix G, Section XV, an impact related to public services is considered significant if the proposed project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection;
b) Police protection;
c) Schools;
d) Parks; and/or
e) Other public facilities.

Question 'a' and 'b'

The Wheatland Fire Authority (WFA) provides fire protection services through a Joint Powers Agency (JPA) comprised of the City of Wheatland and the Plumas Brophy Fire Protection District. Because of growth in the region and recent passage of a fire assessment in the JPA area, the Board has initiated the transition from an all-volunteer fire force to a combined full-time and volunteer force.[17] According to the Wheatland Fire Authority 2022 Annual Report, the WFA employs 23 firefighters and one chief firefighter.[18] The Wheatland Fire Department is located approximately 0.2-mile from the project site on Main Street. The current service ratio is one personnel for every 155 residents.

Police protection services are provided by the Wheatland Police Department (WPD), which currently employs eight full-time sworn officers and five part-time allotted positions for sworn officers.[19] The City maintains the recommended ratio of 1.5 police officers to 1,000 persons established in the City's General Plan EIR, and would be able to maintain the minimum recommended ratio with the proposed population increase.

As previously discussed, the proposed project would generate approximately 1,644 new residents. Therefore, an increase in demand for fire and law enforcement services, as well as other public facilities, could occur. However, increased demand alone is not the relevant inquiry under CEQA, nor is the need for additional staff and/or equipment. The relevant inquiry, as confirmed by the courts (see *City of Hayward v. Board of Trustees of the California State University*) is whether a significant effect on the environment would occur in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services as a result of the increased demand. As discussed throughout this EIR, the project site was planned for residential development by the City and the anticipated growth is within the ranges identified in the General Plan EIR. In addition, prior to the issuance of building permits, the General Plan EIR requires the project proponent to pay applicable development fees in accordance with Assembly Bill (AB) 1600 and local policies. Payment of the required fees would help fund fire protection and police protection services and reduce impacts related to fire and police protection.

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[17] City of Wheatland. *Wheatland Fire Authority*. Available at: https://www.wheatland.ca.gov/departments/wheatland-fire-authority/. Accessed May 2023.

[18] City of Wheatland Fire Authority. *2022 Annual Report*. 2022.

[19] Sylvester, Damien, Chief, Wheatland Police Department. Personal Communication [email] with Kevin Valente, Senior Planner, Raney Planning and Management, Inc. May 25, 2023.

Based on the above, the proposed project would not induce the need for physically altered or expanded governmental facilities for fire or police protection services, the construction of which could cause significant environmental impacts, and a ***less-than-significant*** impact would occur.

Question 'c'

With respect to school facilities, the nearest schools to the project site are the Wheatland Union High School, located approximately 1,000 feet to the northwest of the project site, and Wheatland Elementary School, located approximately 0.4-mile to the northwest. The proposed project would increase the City's population, and thus, the demand for school facilities. However, the proposed project would be required to pay the applicable fees to the Wheatland School District and the Wheatland Union High School District prior to the issuance of any building permits. Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "legislative or adjudicative act involving the planning, use, or development of real property" (Government Code Section 65996[b]). Satisfaction of the Proposition 1A/SB 50 statutory requirements is deemed to be "full and complete mitigation." As such, according to Proposition 1A/SB 50, the payment of the necessary school impact fees for the project would be full and satisfactory CEQA mitigation.

Based on the above, the proposed project would not induce the need for physically altered or expanded governmental facilities for school services, the construction of which could cause significant environmental impacts, and a ***less-than-significant*** impact would occur.

Question 'd'

Parks and recreational amenities are provided by the City's Recreation Department. Pursuant to Policy 6.A.4 of the General Plan, which is enforced by Section 17.09.080 of the City's Municipal Code, new development projects shall provide a minimum of five acres of parkland for every 1,000 new residents. Based on the anticipated population increase of 1,644 new residents, the proposed project would be required to dedicate approximately 8.21 acres of parkland. The proposed project would include the development of an approximately 9.9-acre park, consisting of lots A, C, K, and L; the two-acre Riverside Park; and the 5.1-acre park located between Village 4 and the City's WWTP. Therefore, the proposed project would include a total of approximately 17 acres of parkland. While it should be noted that the 5.41-acre Lot L would serve as both a park and stormwater detention, the proposed project would still exceed the required acreage of parkland, even without the inclusion of Lot L.

Because the proposed project would dedicate more than the required acreage of parkland, the project would result in a ***less-than-significant*** impact related to the need for physically altered or expanded governmental facilities for park services, the construction of which could cause significant environmental impacts.

Question 'e'

Currently, libraries are not located in the City of Wheatland. The Yuba County Library is located at 303 2nd Street in the City of Marysville, approximately 12.7 miles northwest of the project site. While libraries are not located in the City, General Plan policies seek to promote and establish local libraries as growth increases the demand for library services. In addition, the General Plan anticipated residential development of the site and accounted for the increased demand on library services associated with the proposed project. Overall, the proposed project would create a demand for library services beyond what was anticipated for the site, and would not induce the need for physically altered or expanded governmental facilities, the construction of which could cause significant environmental impacts. Therefore, a ***less-than-significant*** impact would occur.

4.6.14 RECREATION

Consistent with CEQA Guidelines, Appendix G, Section XVI, an impact related to recreation is considered significant if the proposed project would:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and/or
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Potential impacts related to questions ‘a’ and ‘b’ are discussed further below.

Questions ‘a’ and ‘b’

As discussed throughout this chapter, the proposed project would involve the development of up to 685 single-family residential units, which is anticipated to result in a population increase of approximately 1,644 residents. Therefore, an increased demand for recreational facilities could occur. Pursuant to Policy 6.A.4 of the General Plan, the City requires new development to provide a minimum of five acres of parkland for every 1,000 new residents. As discussed in Section 4.6.13, Public Services, of this chapter above, the proposed project would provide sufficient parkland and open space to meet City requirements. In addition, the proposed project would include a play structure, lawn games, sports courts, and multi-use fields that provide sport play areas in the northernmost area of the project site. By providing such recreational facilities within the site, the proposed project would not result in an increased demand for such amenities elsewhere in the City, and would not require the construction or expansion of recreational facilities in a way that might have an adverse physical effect on the environment.

Based on the above, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, nor include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Therefore, a ***less-than-significant*** impact would occur.

4.6.15 WILDFIRE

Consistent with CEQA Guidelines, Appendix G, Section XX, an impact related to wildfire is considered significant if the proposed project would:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan;
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; and/or
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Potential impacts related to questions ‘a,’ ‘b,’ ‘c,’ and ‘d’ are discussed further below.

Questions ‘a’ through ‘d’

According to the California Department of Forestry and Fire Protection (CAL-FIRE) Fire and Resource Assessment Program (FRAP), the project site is not located within a Very High, High, or Moderate FHSZ.[20] In addition, the Bear River is located south of the project site, which would serve as fire break. Furthermore, according to the General Plan EIR, the City is among the most fire secure areas in Yuba County.[21] The development of the site from vacant land into a residential area would decrease fire risk, as urbanized areas are generally less susceptible to the uncontrolled spread of wildland fires due to the removal of fuel sources, such as vegetated landscape. The relatively flat terrain of the project site also decreases the danger of wildland fires, as slopes exacerbate the spread of wildfire, due to fires increasing in speed when traveling uphill. Finally, the residences included as part of the proposed project would include fire sprinklers as required by State law, which would further reduce impacts related to wildfire.

Based on the above, the proposed project would not be at risk of substantial adverse effects related to wildfire, and a ***less-than-significant*** impact would occur.

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[20] California Department of Forestry and Fire Protection. *Fire Hazard Severity Zone Viewer*. Available at: https://egis.fire.ca.gov/FHSZ/. Accessed May 2023.

[21] City of Wheatland. *General Plan Update Draft Environmental Impact Report* [pg. 4.7-19]. December 2005.

5. Statutorily Required Sections

5. STATUTORILY REQUIRED SECTIONS

5.1 INTRODUCTION

The Statutorily Required Sections chapter of the EIR includes discussions regarding those topics that are required to be included in an EIR, pursuant to CEQA Guidelines, Section 15126.2. The chapter includes a discussion of the proposed project's potential to result in growth-inducing impacts; the cumulative setting analyzed in this EIR; significant irreversible environmental changes; and significant and unavoidable impacts caused by the proposed project.

5.2 GROWTH-INDUCING IMPACTS

State CEQA Guidelines Section 15126.2(e) requires an EIR to evaluate the potential growth-inducing impacts of a proposed project. Specifically, an EIR must discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth can be induced in a number of ways, including the elimination of obstacles to growth, or by encouraging and/or facilitating other activities that could induce growth. Examples of projects likely to have growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or office complexes in areas that are currently only sparsely developed or are undeveloped.

The CEQA Guidelines are clear that while an analysis of growth-inducing effects is required, it should not be assumed that induced growth is necessarily significant or adverse. This analysis examines the following potential growth-inducing impacts related to implementation of the proposed project and assesses whether these effects are significant and adverse (see CEQA Guidelines, Section 15126.2[e]):

1. Foster population and economic growth and construction of housing.
2. Eliminate obstacles to population growth.
3. Affect service levels, facility capacity, or infrastructure demand.
4. Encourage or facilitate other activities that could significantly affect the environment.

Foster Population and Economic Growth and Construction of Housing

The proposed project would include the development of up to 685 single-family residential units. As discussed in Chapter 4.6, Other Effects, of this EIR, according to the General Plan, the City of Wheatland's has an average of 2.4 persons per household. Therefore, the proposed project would increase the City's population by approximately 1,644 additional residents (685 units x 2.4 persons per household = 1,644 new residents). The new residential population would likely patronize local businesses and services in the area, fostering economic growth. The Wheatland General Plan anticipated population growth from approximately 3,178 in 2004 to 30,100 by 2025. According to the U.S. Census Bureau, the City's current population is 3,712.[1] Thus, the residents generated by the proposed project would not result in the City exceeding the 2025 population total anticipated by the General Plan. In addition, although the proposed project would increase

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[1] U.S. Census Bureau. *Wheatland city, California*. Available at: https://data.census.gov/profile/Wheatland_city,_California?g=160XX00US0685012. Accessed June 2024.

the density beyond what has been anticipated by the City, the project site was already planned for residential development by the City and the anticipated growth would be within the ranges identified in the General Plan EIR.

While construction of the proposed project would result in increased construction employment opportunities, which could potentially result in increased permanent population and demand for housing in the vicinity of the project site, employment patterns of construction workers is such that construction workers would not likely, to any significant degree, relocate their households as a result of the construction-related employment opportunities associated with the proposed project. Although the proposed project would provide short-term employment opportunities, which would likely be filled from the local employee base, with the possible exception of a few household and landscape maintenance jobs, permanent jobs would not be directly created by the proposed project. Therefore, the project would not result in long-term employment growth in the area.

Appendix G of CEQA Guidelines has been recently amended to clarify that unplanned population growth would be considered a potentially significant impact. However, growth that is planned, and the environmental effects of which have been analyzed in connection with a land use plan or a regional plan, should not by itself be considered an impact. Consequently, as discussed above, although the proposed project would result in population growth within the City of Wheatland, such growth would be within the buildout projections for the City anticipated in the General Plan. Thus, while the project would foster population and economic growth, such growth would be similar to what has been previously anticipated for the project region, and a less-than-significant impact related to population and economic growth would occur.

Eliminate Obstacles to Population Growth

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines, into areas that are not currently provided with these services, would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth.

As discussed in Chapter 4.5, Utilities and Service Systems, water service to the project site would be provided by connections to existing water supply lines in the surrounding vicinity. While sufficient water supplies exist to serve the proposed project, the City's existing storage facilities would not sufficiently meet the additional storage requirements associated with the proposed project, and new water supply facilities would be needed to meet the storage requirements. As such, the proposed project would be required to construct a water storage facility to provide sufficient storage and ensure adequate capacity to meet the storage requirements. All potential physical environmental impacts that could result from development of the proposed project, including new utility infrastructure, have been evaluated throughout the technical chapters of this EIR. The on-site water system would be sized to serve only the proposed project and would be financed by the project applicant.

Similarly, the proposed project would include new connections to existing sewer infrastructure either in existing road ROWs, such as Malone Avenue, or within areas proposed for disturbance as part of the proposed internal roadway network, which would convey wastewater generated by the proposed project to the existing wastewater treatment plant (WWTP) located adjacent to the project site's southern boundary until the regional sewer pipeline project is constructed. All new on-site sewer infrastructure would be sized to accommodate the proposed project only and would be financed by the project applicant.

While the proposed project would include development of two roadways, DeValentine Parkway and Red Oak Drive, which would connect to SR 65 at the project site's eastern boundary and provide two additional access points to the project site, such roadways would be intended primarily for vehicles accessing the internal roadway network of the project site. The proposed roadway improvements would improve connectivity to the project site, serving residents of the proposed project and would not be anticipated to eliminate obstacles to population growth.

The aforementioned improvements are essential to support the proposed project and would not eliminate obstacles to growth in a manner that would encourage previously unplanned growth.

Affect Service Levels, Facility Capacity, or Infrastructure Demand

Increases in population that would occur as a result of a project could significantly strain existing community service facilities, requiring construction of new facilities that could cause significant environmental impacts. As discussed in Chapter 4.6, Other Effects, increased demands for public services, including fire and police protection services, attributable to the proposed project would not necessitate the construction of new or expanded facilities that could cause significant impacts. The project would be required to comply with General Plan policies and pay applicable development fees that support emergency police and fire services. In addition, the project would be required to pay applicable fees to the Wheatland School District and the Wheatland Union High School District.

As discussed in Chapter 4.5, Utilities and Service Systems, of this EIR, the City has confirmed that the existing City WWTP maintains sufficient treatment capacity to accommodate flows from the proposed project and the associated maximum of 685 residences. Although sufficient water supplies exist to serve the proposed project, the City's existing storage facilities would not sufficiently meet the additional storage requirements associated with the proposed project, and new water supply facilities would be needed to meet the storage requirements. As such, the proposed project would be required to construct a water storage facility to provide sufficient storage and ensure adequate capacity to meet the storage requirements. However, the proposed infrastructure improvements are essential to support the proposed project, would be sized to serve only the proposed project, and would be financed by the project applicant. All potential physical environmental impacts that could result from development of the proposed project, including new utility infrastructure, have been evaluated throughout the technical chapters of this EIR.

The landfill that would serve the proposed project has adequate capacity to manage the solid waste generated as a result of the project. Mitigation Measure 4.5-5 of this EIR would ensure that the proposed project would not create or contribute runoff water that would exceed the capacity of the City's stormwater drainage systems. Therefore, the proposed project would not increase population such that service levels, facility capacity, or infrastructure demand would require construction of new facilities that could cause significant environmental impacts.

Encourage or Facilitate other Activities That Could Significantly Affect the Environment

This EIR provides a comprehensive assessment of the potential for environmental impacts associated with implementation of the proposed project. Please refer to Chapters 4.1 through 4.6

of this EIR, which comprehensively address the potential for impacts from development of the proposed project.

5.3 CUMULATIVE IMPACTS

CEQA Guidelines, Section 15130 requires that an EIR discuss the cumulative and long-term effects of the proposed project that would adversely affect the environment. “Cumulative impacts” are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines, Section 15355). “[I]ndividual effects may be changes resulting from a single project or a number of separate projects” (CEQA Guidelines, Section 15355, subd. [a]). “The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time” (CEQA Guidelines, Section 15355, subd. [b]).

The need for cumulative impact assessment reflects the fact that, although a project may cause an “individually limited” or “individually minor” incremental impact that, by itself, is not significant, the increment may be “cumulatively considerable,” and, thus, significant, when viewed together with environmental changes anticipated from past, present, and probable future projects (CEQA Guidelines, Section 15064, subd. [h(1)], Section 15065, subd. [c], and Section 15355, subd. [b]). Accordingly, particular impacts may be less than significant on a project-specific basis but significant on a cumulative basis if their small incremental contribution, viewed against the larger backdrop, is cumulatively considerable. However, it should be noted that CEQA Guidelines, Section 15064, Subdivision (h)(5) states, “[…] the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.” Therefore, even where cumulative impacts are significant, any level of incremental contribution is not necessarily deemed cumulatively considerable.

Section 15130(b) of CEQA Guidelines indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses, but that analysis should reflect the severity of the impacts and their likelihood of occurrence, and that the analysis should be focused, practical, and reasonable. To be adequate, a discussion of cumulative effects must include the following elements:

> (1) Either (a) a list of past, present and probable future projects, including, if necessary, those outside the agency’s control, or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provide that such documents are reference and made available for public inspection at a specified location;
>
> (2) A summary of the individual projects’ environmental effects, with specific reference to additional information and stating where such information is available; and
>
> (3) A reasonable analysis of all of the relevant projects’ cumulative impacts, with an examination of reasonable, feasible options for mitigating or avoiding the project’s contribution to such effects (Section 15130[b]).

For some projects, the only feasible mitigation measures will involve the adoption of ordinances or regulations, rather than the imposition of conditions on a project-by-project basis (Section

15130[c]). Section 15130(a)(3) states that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund the project's fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

A discussion of cumulative impacts is provided within each of the technical chapters of this EIR pursuant to CEQA Guidelines Section 15130.

Cumulative Setting

The lead agency should define the relevant geographic area of inquiry for each impact category (id., Section 15130, subd. [b][3]), and should then identify the universe of "past, present, and probable future projects producing related or cumulative impacts" relevant to the various categories, either through the preparation of a "list" of such projects or through the use of "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact" (id., subd. [b][1]).

The majority of the cumulative analysis in this EIR is based upon a summary of projections contained in the City's General Plan, and considers the development anticipated to occur as part of buildout of the City's General Plan planning area as the cumulative setting. Limited situations exist where geographic setting differs between project chapter analysis within a particular region. Examples include hydrology, for which the cumulative geographic setting is generally limited to the Bear River and Grasshopper Slough Watersheds and their tributaries. Another example is air quality, for which the cumulative geographic setting is the Sacramento Valley Air Basin (SVAB). Global climate change is, by nature, a cumulative impact. Greenhouse gas (GHG) emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change (e.g., sea level rise, more extreme weather patterns, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts). A single project could not generate enough GHG emissions to contribute noticeably to a change in the global average temperature. However, the combination of GHG emissions from a project in combination with other past, present, and future projects could contribute substantially to the world-wide phenomenon of global climate change and the associated environmental impacts. Although the geographical context for global climate change is the Earth, for analysis purposes under CEQA, and due to the regulatory context pertaining to GHG emissions and global climate change applicable to the proposed project, the geographical context for global climate change in this EIR is limited to the State of California.

5.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines Section 15126.2(d) identifies an impact category that sometimes must be addressed in EIRs: significant irreversible environmental changes that would be caused by the proposed project, should the project be implemented. CEQA Guidelines Section 15127 states that this impact category need be included only in EIRs prepared in connection with certain categories of projects, one of which is "[t]he adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency." Although the proposed project is not itself a plan, policy, or ordinance, the proposed project does propose amendments to the General Plan. For this reason, the City has conservatively chosen to address this impact category.

An impact would be determined to be a significant and irreversible change in the environment if:

- Buildout of the project area could involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of development could generally commit future generations to similar uses (e.g., a highway provides access to a previously remote area);
- Development of the proposed project could involve uses in which irreversible damage could result from any potential environmental accidents associated with the project; or
- The phasing and eventual development of the project could result in an unjustified consumption of resources (e.g., the wasteful use of energy).

The proposed project would likely result in, or contribute to, the following significant irreversible environmental changes:

- Conversion of predominantly vacant land to a fully built-out residential community, thus precluding alternative land uses in the future;
- Irreversible consumption of goods and services, such as fire, police, and school services, associated with the future population; and
- Irreversible consumption of energy and natural resources, such as water, electricity, and natural gas, associated with the future residents.

If the Wheatland City Council chooses to approve the proposed project, the City Council will be concluding that the irreversible environmental changes, and the natural resource consumption that accompanies them, are justified in light of the economic, social, or other benefits that the City Council might invoke in approving the project. For example, the City Council might conclude that the economic and social benefits created by 685 new homes justify the irretrievable loss of environmental and natural resources.

5.5 SIGNIFICANT AND UNAVOIDABLE IMPACTS

According to CEQA Guidelines, an EIR must include a description of those impacts identified as significant and unavoidable should the proposed action be implemented (CEQA Guidelines Section 15126.2[c]). Such impacts would be considered unavoidable when the determination is made that either mitigation is not feasible or only partial mitigation is feasible such that the impact is not reduced to a level that is less-than-significant. This section identifies significant impacts that could not be eliminated or reduced to a less-than-significant level by mitigations imposed by the City. The final determination of the significance of impacts and the feasibility of mitigation measures would be made by the City as part of the City's certification action. The significant and unavoidable impacts of the proposed project are summarized below.

Conflict with or obstruct implementation of the applicable air quality plan during project operation. (Impact 4.1-2)

As presented in Table 4.1-11 of the EIR, the proposed project's maximum unmitigated operational emissions of ROG and NO_x would exceed the applicable FRAQMD thresholds of significance. Implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b) would reduce the proposed project's operational area and mobile source emissions through the use of zero-VOC paints, finishes, adhesives, and cleaning supplies, and implementation of Mitigation Measure 4.3-3 as set forth in the Transportation chapter of this EIR, which requires implementation of Transportation Demand Management (TDM) strategies to reduce home-based VMT per capita that would be generated by the proposed project by 10.2 percent. However, as shown in Table 4.1-12, even with implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b), the proposed project's operational

ROG and NO_X emissions would continue to exceed the applicable thresholds of significance. Additional feasible mitigation for the reduction of the proposed project's operational ROG and NO_X emissions to below the applicable thresholds of significance is not currently available. Thus, even with implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b), the impact would remain *significant and unavoidable*.

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). (Impact 4.1-5)

In developing thresholds of significance for air pollutants, FRAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, the project's emissions would be considered cumulatively considerable, resulting in a significant adverse incremental contribution to the region's existing air quality conditions. Therefore, if the project's emissions are below the FRAQMD's thresholds, then the project would not result in a cumulatively considerable increase of any criteria air pollutant. The proposed project's unmitigated cumulative contribution to regional emissions is equivalent to the project's unmitigated operational emissions, as presented in Table 4.1-11 of this EIR.

In addition, FRAQMD's thresholds of significance were established with consideration given to the health-based air quality standards established by the AAQS, and are designed to aid the district in implementing the applicable attainment plans to achieve attainment of the AAQS. Thus, if a project's criteria pollutant emissions exceed the FRAQMD's mass emission thresholds of significance, a project would be considered to conflict with or obstruct implementation of the FRAQMD's air quality planning efforts, thereby delaying attainment of the AAQS.

As presented in Table 4.1-11 of the EIR, the proposed project's maximum unmitigated operational emissions of ROG and NO_x would exceed the applicable FRAQMD thresholds of significance. Even with implementation of Mitigation Measures 4.1-2(a) and 4.1-2(b), the proposed project would result in emissions that exceed the FRAQMD's thresholds of significance during operations. Therefore, as discussed under Impact 4.1-2, because the proposed project's operational ROG and NO_X emissions would still not be reduced to below the applicable thresholds of significance, and additional feasible mitigation sufficient to reduce the proposed project's operational ROG and NO_X emissions to below the FRAQMD's thresholds of significance is not currently available, even with implementation of the following mitigation measure, the proposed project's incremental contribution to the significant cumulative effect would remain *cumulatively considerable* and *significant and unavoidable*.

6. Alternatives Analysis

6. ALTERNATIVES ANALYSIS

6.1 INTRODUCTION

The Alternatives Analysis chapter of the EIR includes consideration and discussion of a range of reasonable alternatives to the proposed project, as required per CEQA Guidelines Section 15126.6. Generally, the chapter includes discussions of the following: the purpose of an alternatives analysis; alternatives considered but dismissed; a reasonable range of project alternatives and their associated impacts in comparison to the proposed project's impacts; and the environmentally superior alternative.

6.2 PURPOSE OF ALTERNATIVES

The primary intent of the alternatives evaluation in an EIR, as stated in Section 15126.6(a) of the CEQA Guidelines, is to "[…] describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." In the context of CEQA Guidelines Section 21061.1, "feasible" is defined as:

> [...]capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.

Section 15126.6(f) of CEQA Guidelines states, "The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." Section 15126.6(f) of CEQA Guidelines further states:

> The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determined could feasibly attain most of the basic objectives of the project.

In addition, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative."

The CEQA Guidelines provide the following guidance for discussing alternatives to a proposed project:

- An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6[a]).
- Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if

these alternatives would impede to some degree the attainment of the project objectives, or would be more costly (CEQA Guidelines Section 15126.6[b]).

- The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination […] Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6[c]).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison (CEQA Guidelines Section 15126.6[d]).
- If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed (CEQA Guidelines Section 15126.6[d]).
- The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (CEQA Guidelines Section 15126.6[e][1]).
- If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6[e][2]).

Project Objectives

Based on the above, reasonable alternatives to the project must be capable of feasibly attaining most of the basic objectives of the project. The proposed project is being pursued with the following objectives:

1. Provide a variety and diverse mix of housing opportunities at a broad range of new home sales price points.
2. Respect the small-town character of the City by designing distinct connected neighborhoods that foster a strong sense of community.
3. Create new recreational amenities including active and passive parks, pedestrian and bicycle trails, and by preserving open space areas adjacent to the Bear River.
4. Establish a high standard of design for the residential and landscape architecture with guidelines and development standards to ensure a quality and sustainable community.
5. Construct new public infrastructure to serve the new community, including roadways and water, wastewater, and drainage utilities.
6. Participate in the City public infrastructure and capital facilities program through the payment of development impact fees and/or the construction of required capital facilities improvements.
7. Enhance transportation circulation within the City by providing new roadways connecting to properties to the west of the community, and pedestrian and bicycle trail connectivity to the north of the community.

8. Increase opportunities for new retail development and employment opportunities by providing new housing and residents in the City.
9. Ensure costs for maintaining the landscape and public facilities within the new community are funded by the new homeowners within the new community.
10. Generate new property tax and sales tax revenue to support and enhance public services within the City.

Impacts Identified in the EIR

In addition to attaining the majority of project objectives, reasonable alternatives to the project must be capable of reducing the magnitude of, or avoiding, identified significant environmental impacts of the proposed project. The significance level of impacts identified in the EIR are presented below.

Less Than Significant or No Impact

As discussed within each respective section of this EIR, the proposed project would result in no impact, a less-than-significant impact, or a less than cumulatively considerable contribution to a significant cumulative impact related to the following topics associated with the resource areas indicated, and mitigation would not be required:

- ***Air Quality and Greenhouse Gas Emissions***
    - Conflict with or obstruct implementation of the applicable air quality plan during construction.
    - Expose sensitive receptors to substantial pollutant concentrations.
    - Result in other emissions (such as those leading to odor) adversely affecting a substantial number of people.

- ***Noise***
    - Generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
    - Generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
    - Generation of excessive groundborne vibration or groundborne noise levels.
    - For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.
    - Generation of a substantial permanent increase in ambient noise levels associated with the proposed project in combination with cumulative development.

- ***Transportation***
    - Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway bicycle, and pedestrian facilities, during operations.
    - Substantially increase hazards to vehicle safety due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
    - Result in inadequate emergency access.

- ***Tribal Cultural Resources.***
  - Cumulative loss of tribal cultural resources.

- ***Utilities and Service Systems***
  - Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
  - Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
  - Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
  - Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, or conflict with federal, State, and local management and reduction statutes and regulations related to solid waste.
  - Increase in demand for utilities and service systems associated with the proposed project, in combination with future buildout of the Wheatland General Plan.
  - Cumulative impacts related to the alteration of existing drainage patterns.

- ***Other Effects***
  - *Aesthetics (All Sections);*
  - *Agriculture and Forestry Resources (All Sections);*
  - *Biological Resources (Sections c,d);*
  - *Cultural Resources (Section a);*
  - *Energy (All Sections);*
  - *Geology and Soils (Sections ai,aii,b,e);*
  - *Hazards and Hazardous Materials (Sections a,c,d,e);*
  - *Hydrology and Water Quality (Sections b,ci,cii,d,e);*
  - *Land Use and Planning (All Sections);*
  - *Mineral Resources (All Sections);*
  - *Population and Housing (All Sections);*
  - *Public Services (All Sections);*
  - *Recreation (All Sections); and*
  - Wildfire *(All Sections).*

Less Than Significant with Mitigation

Environmental impacts (including cumulative impacts) of the proposed project that have been identified as requiring mitigation measures to ensure that the level of significance is ultimately less than significant include the following:

- ***Air Quality and Greenhouse Gas Emissions.*** The EIR determined that implementation of the proposed project could result in a cumulatively considerable incremental contribution to significant impacts related to the generation of greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. However, the EIR requires mitigation in order to ensure that the aforementioned impacts are reduced to a less-than-significant level.

- ***Transportation.*** The EIR determined that implementation of the proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system during construction activities. Additionally, the EIR determined that the proposed project could conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). However, the EIR requires mitigation in order to ensure that the foregoing impacts related to transportation are reduced to less-than-significant levels.

- ***Tribal Cultural Resources.*** The EIR determined that ground-disturbing activities associated with construction of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource, as defined in PRC Section 21074. However, the EIR requires mitigation in order to ensure that the foregoing impact related to tribal cultural resources is reduced to a less-than-significant level.

- ***Utilities and Service Systems.*** The EIR determined that the proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. However, the EIR requires mitigation in order to ensure that the aforementioned impact is reduced to a less-than-significant level.

- ***Other Effects***
    - *Biological Resources (Sections a, b, e);*
    - *Cultural Resources (Sections b, c);*
    - *Geology and Soils (Sections aiii, aiv, c, d, f);*
    - *Hazards and Hazardous Materials (Section b); and*
    - *Hydrology and Water Quality (Sections a, civ).*

Impacts identified and fully mitigated in the Other Effects chapter would be similar or fewer for all of the alternatives included in this chapter. Accordingly, topics dismissed within the Other Effects chapter are not specifically addressed within the sections below.

Significant and Unavoidable

The EIR has determined that the following project impacts would remain significant and unavoidable, even after implementation of the feasible mitigation measures set forth in this EIR:

- ***Air Quality and Greenhouse Gas Emissions.*** The EIR determined that the proposed project would result in a significant and unavoidable impact related to a conflict with or obstruction of implementation of the applicable air quality plan during project operation. Additionally, the EIR determined that the proposed project would result in a cumulatively considerable and significant and unavoidable impact related to a net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard.

6.3 SELECTION OF ALTERNATIVES

The requirement that an EIR evaluate alternatives to the proposed project or alternatives to the location of the proposed project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained, while reducing the magnitude of, or avoiding, one or more of the significant environmental impacts of the proposed project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. However, the CEQA Guidelines require the EIR to "set forth only those alternatives necessary to permit a reasoned choice." As stated in Section 15126.6(a), an EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. The CEQA Guidelines provide a definition for "a range of reasonable alternatives" and thus limit the number and type of alternatives that may need to be evaluated in a given EIR. According to the CEQA Guidelines Section 15126.6(f):

> The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determined could feasibly attain most of the basic objectives of the project.

First and foremost, alternatives in an EIR must be feasible. In the context of CEQA Guidelines Section 21061.1, "feasible" is defined as:

> ...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.

Finally, an EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative."

Alternatives Considered But Dismissed From Further Analysis

Consistent with CEQA, primary consideration was given to alternatives that could reduce significant project impacts, while still meeting most of the basic project objectives.

As stated in Guidelines Section 15126.6(c), among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are:

(i) failure to meet most of the basic project objectives,
(ii) infeasibility, or
(iii) inability to avoid significant environmental impacts.

Regarding item (ii), infeasibility, among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

The off-site alternative was considered but dismissed from detailed analysis in this EIR. The reason(s) for dismissal, within the context of the three above-outlined permissible reasons, are provided below.

Off-Site Alternative

As noted previously, the purpose of an alternatives analysis is to develop alternatives to the proposed project that are feasible and able to substantially lessen at least one of the significant environmental effects identified as a result of the project, while still meeting most, if not all, of the basic project objectives. The applicant does not own an off-site alternative location that would be adequate to accommodate the proposed project. Further, a vacant site of similar size and planned for residential use within the City that could accommodate buildout similar to the proposed project does not exist. For example, a site large enough to accommodate similar development within the City would be the Jones Ranch Project site, located to the west of the project site. However, the Jones Ranch Project has already been approved by the City and is in the permitting process. The only other available land that could accommodate similar development within the City is located to the east of the project site; however, such land is currently used as active agricultural land and would require the extension of utilities in order to serve new development.

Generally assuming that an area of currently undeveloped land within the existing City could accommodate the proposed project, development of the proposed project at an off-site location would be incapable of meeting Objectives 3 and 7, and would be less practical than the proposed project due to lack of site suitability, economic viability, and availability of infrastructure. In addition, development of any undeveloped site within the City with the same type and intensity of uses as the proposed project would require similar construction activities and/or extension of utilities infrastructure. Development of such infrastructure would result in similar, or likely greater, disturbance of previously undeveloped areas than the proposed project. Similarly, as the project site has already undergone mass grading, including for one of the detention basins proposed to be improved and used for the proposed project, development on another off-site property that has not been subject to such disturbance would be expected to result in greater impacts than the proposed project. For example, the potential for impacts related to special-status species or other sensitive resources could be greater, as the potential for such to occur on such an off-site property would be increased. Therefore, an Off-Site Alternative would result in similar and potentially greater environmental impacts than the proposed project. Overall, a feasible off-site location that would meet the requirements of CEQA, as well as meet the basic objectives of the proposed project, does not exist, and an Off-Site Alternative was dismissed from detailed analysis within this EIR.

Alternatives Considered in this EIR

The following alternatives are considered potentially feasible alternatives to the project and are evaluated in further detail in this section:

- No Project (No Build) Alternative;
- Buildout Pursuant to Existing General Plan Alternative; and
- Increased Density Alternative.

Each of the project alternatives is described in detail below, with a corresponding analysis of each alternative's anticipated impacts in comparison to the proposed project. As discussed above, reasonable alternatives to the project must be capable of reducing the magnitude of, or avoiding, identified significant environmental impacts of the proposed project. Therefore, this chapter focuses on the resource areas and specific impacts listed above that have been identified in this EIR for the proposed project as requiring mitigation to reduce significant impacts to less than significant, or have been found to remain significant and unavoidable. While an effort has been made to include quantitative data for certain analytical topics, where possible, qualitative comparisons of the various alternatives to the project are primarily provided. Such an approach to the analysis is appropriate as evidenced by CEQA Guidelines Section 15126.6(d), which states that the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

The analysis evaluates impacts that would occur with the alternatives relative to the significant impacts identified for the proposed project. When comparing the potential impacts resulting from implementation of the foregoing alternatives, the following terminology is used:

- “Fewer” = Less than Proposed Project;
- “Similar” = Similar to Proposed Project;
- “Greater” = Greater than Proposed Project; and
- “None” = No Impact.

When the term “fewer” is used, the reader should not necessarily equate this to elimination of significant impacts identified for the proposed project. For example, in many cases, an alternative would reduce the relative intensity of a significant impact identified for the proposed project, but the impact would still be expected to remain significant under the alternative, thereby requiring mitigation. In other cases, the use of the term “fewer” may mean the actual elimination of an impact identified for the proposed project altogether. Similarly, use of the term “greater” does not necessarily imply that an alternative would require additional mitigation beyond what has been required for the proposed project. To the extent possible, this analysis will distinguish between the two implications of the comparative words “fewer” and “greater”.

See Table 6-3 for a comparison of the environmental impacts resulting from the considered alternatives and the proposed project.

No Project (No Build) Alternative

CEQA requires the evaluation of the comparative impacts of the “No Project” alternative (CEQA Guidelines Section 15126.6[e]). Analysis of the no project alternative shall:

> “… discuss […] existing conditions […] as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.” (*Id.*, subd. [e][2]) “If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the ‘no project’ alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in the property’s existing state versus environmental effects that would occur if the project were approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed. In certain instances, the no project alternative means ‘no build,’ wherein the existing environmental setting is maintained. However, where failure to proceed with the project would not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.” (*Id.*, subd. [e][3][B]).

The City has decided to evaluate a No Project (No Build) Alternative, which assumes that the current conditions of the project site would remain, and the site would not be developed. As described in this EIR, the project site is generally flat, vacant land that has been subject to mass disturbance through regular mowing activities. Vegetation on the site consists primarily of sparse ruderal vegetation, along with various trees and shrubs within the southern portion of the project site. In addition, Malone Avenue runs in a northwest-to-southeast direction through the northern portion of the project site and continues to travel southeast as a portion of the project site's western boundary. The No Project (No Build) Alternative would not meet any of the project objectives and would not meet the overall intent of the City's land use designation for this site.

Air Quality and Greenhouse Gas Emissions

Because the No Project (No Build) Alternative would not involve development of the project site, construction and operational activities would not occur under the alternative. Therefore, the Alternative would not result in construction or operational emissions, and would not generate reactive organic gas (ROG) or nitrogen oxides (NO_X) emissions in excess of the applicable Feather River Air Quality Management District's (FRAQMD's) thresholds of significance, or conflict with the City's Climate Action Plan (CAP). Thus, the impacts identified for the proposed project related to air quality and GHG emissions would not occur under the No Project (No Build) Alternative, and the mitigation measures identified in the EIR related to such would not be required. The significant and unavoidable impact identified for the proposed project related to air quality would not occur under the No Project (No Build) Alternative. Overall, impacts related to air quality and GHG emissions would not occur under the No Project (No Build) Alternative.

Transportation

The No Project (No Build) Alternative would not involve any construction and, thus, would not have the potential to conflict with a program, plan, ordinance, or policy addressing the circulation system during construction activities. In addition, because new development would not occur under the No Project (No Build) Alternative, the Alternative would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Thus, the mitigation measures related to transportation impacts required for the proposed project would not be required. Overall, impacts related to transportation would not occur under the No Project (No Build) Alternative.

Tribal Cultural Resources

Because land disturbance would not occur under the No Project (No Build) Alternative, the Alternative would not have the potential to result in impacts to tribal cultural resources. The mitigation measures related to tribal cultural resources impacts required for the proposed project would not be required. Overall, the impacts identified for the proposed project related to tribal cultural resources would not occur under the No Project (No Build) Alternative.

Utilities and Service Systems

The No Project (No Build) Alternative would not alter the existing drainage pattern of the site or area and the associated impacts would not occur. The mitigation measure related to utilities and service systems impacts required for the proposed project would not be required. Overall, impacts related to utilities and service systems would not occur under the No Project (No Build) Alternative.

Buildout Pursuant to Existing General Plan Alternative

Under the Buildout Pursuant to Existing General Plan Alternative, the proposed project would be developed pursuant to the existing Low Density Residential (LDR) designation, as compared to the currently proposed Low-Medium Density Residential (LMDR) and Medium Density Residential (MDR) designations. The LDR designation allows for a density range of 3.0 to 4.0 dwelling units per acre (du/ac). As currently proposed, the net density of the residential villages would be 6.51 du/ac, while the gross density based on the total acreage would be 4.58 du/ac. Under the Buildout Pursuant to Existing General Plan Alternative, assuming the project were built pursuant to the maximum allowable 4.0 du/ac, the number of residential units on the site would be reduced to a maximum of 594 units, compared to the currently proposed maximum of 685 units, which would be a decrease of 91 units.

The proposed development area of the project site would not change under the Buildout Pursuant to Existing General Plan Alternative, and all other site improvements required under the proposed project would still be developed under the Buildout Pursuant to Existing General Plan Alternative, including parks and open space, an internal roadway network, and utilities improvements.

The Alternative would still require the approval of a Rezone and General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review. Furthermore, although the Buildout Pursuant to Existing General Plan Alternative would generally result in similar development as the proposed project, because the Alternative would include the development at a lower density and 91 fewer units, Objective 1 would only partially be met. Additionally, Objectives 9 and 10 would only be partially met because the reduction of 91 units would result in less potential for sufficient funding of maintaining landscape and public facilities, as well as less new property tax and sales tax revenue. The remaining project objectives would be met by the Buildout Pursuant to Existing General Plan Alternative.

Air Quality and Greenhouse Gas Emissions

The Buildout Pursuant to Existing General Plan Alternative would include the development of 91 fewer residential units.

The California Emissions Estimator Model (CalEEMod) version 2022.1.1.24 was used to model emissions associated with the Buildout Pursuant to Existing General Plan Alternative. The modeling results are included in Appendix C of this EIR. Other than the number of residential units, all modeling assumptions under the Alternative are similar to those of the proposed project, including operational year, trip generation rates, and natural gas only fireplaces.

Based on the CalEEMod results, Table 6-1 presents the maximum unmitigated operational emissions associated with the Buildout Pursuant to Existing General Plan Alternative in comparison to the proposed project and the applicable thresholds of significance. As shown in the table, although the Buildout Pursuant to Existing General Plan Alternative would result in fewer operational criteria pollutant emissions compared to the proposed project, the estimated operational emissions of ROG and NO_X would still exceed the applicable FRAQMD thresholds of significance, and Mitigation Measures 4.1-2(a) and (b) would still be required. For similar reasons as explained in Chapter 4.1, even with implementation of the aforementioned mitigation measures, the impact would remain significant and unavoidable. Therefore, the significant and unavoidable impacts related to air quality would still occur under the Buildout Pursuant to Existing General Plan Alternative.

Table 6-1
Buildout Pursuant to Existing General Plan Alternative Maximum Unmitigated Operational Emissions

Pollutant	Proposed Project Emissions	Buildout Pursuant to Existing General Plan Alternative	Threshold of Significance
ROG	57.7 lbs/day	56.1	25 lbs/day
NO_X	41.9 lbs/day	36.3	25 lbs/day
PM_{10}	61.2 lbs/day	53.1	80 lbs/day

Source: CalEEMod, April 2024 (see Appendix C).

With respect to GHG emissions, based on the modeling conducted for the Alternative, construction of the Alternative was estimated to generate maximum unmitigated GHG emissions of 843 metric tons of CO_2 equivalents per year ($MTCO_2e$/yr), which is a decrease from the construction GHG emissions estimated for the proposed project of 926 $MTCO_2e$/yr. The total unmitigated annual operational GHG emissions of the Alternative, as compared to the proposed project, are presented in Table 6-2.

Table 6-2
Buildout Pursuant to Existing General Plan Alternative Maximum Unmitigated Operational GHG Emissions

	Annual GHG Emissions ($MTCO_2e$/yr)	
Source	**Buildout Pursuant to Existing General Plan Alternative**	**Proposed Project**
Mobile	8,197	9,453
Area	473	546
Energy	1,393	1,606
Water	52.1	59.9
Waste	132	153
Refrigerants	1.37	1.58
Total Annual GHG Emissions	**10,249**	**11,818**

Note: Rounding may result in slight differences in summation.

Source: CalEEMod, April 2024 (see Appendix C).

As shown therein, operations associated with the Alternative would result in a reduction of GHG emissions from what is anticipated for the proposed project by 1,569 $MTCO_2e$/yr. Additionally, the Alternative would be consistent with the majority of the applicable City CAP requirements. However, because detailed site plans have not been developed for the Alternative, the inclusion of traffic calming and congestion management infrastructure cannot be ensured. Therefore, similar to the proposed project, the Buildout Pursuant to Existing General Plan Alternative could conflict with the related measure, and Mitigation Measure 4.1-6 would still be required.

Overall, although the significant and unavoidable impacts related to air quality and GHG emissions would remain, because the Alternative would result in reduced operational criteria pollutant and GHG emissions, impacts related to air quality and GHG emissions under the Buildout Pursuant to Existing General Plan Alternative would be fewer than the proposed project.

Transportation

Similar to the proposed project, the Buildout Pursuant to Existing General Plan Alternative would add construction vehicle traffic to area roadways, thereby potentially conflicting with a program, plan, ordinance, or policy addressing the circulation system during construction activities. As such, Mitigation Measure 4.3-1, which requires the project applicant to prepare a traffic control plan, would still be required under the Alternative.

Because the Alternative would result in the reduction of 91 fewer residential units than the proposed project, the associated operational vehicle trips would be fewer. However, because the Alternative would involve the development of residential uses, the Buildout Pursuant to Existing General Plan Alternative is anticipated to result in a similar VMT per capita as the proposed project. Given that the VMT analysis included within this EIR is based on a threshold of significance related to VMT per capita, the Alternative would still result in VMT per capita that would exceed the applicable threshold of significance, and Mitigation Measure 4.3-3 would still be required.

Overall, impacts related to transportation would be similar under the Buildout Pursuant to Existing General Plan Alternative as compared to the proposed project.

Tribal Cultural Resources

While the Buildout Pursuant to Existing General Plan Alternative would result in the development of 91 fewer residential units than the proposed project, the overall development area would not change. As such, the Alternative's potential to result in impacts to tribal cultural resources would be the same as the proposed project, and Mitigation Measures 4.4-1(a) through (c), which require appropriate measures should tribal cultural resources be discovered on-site during ground-disturbing activities, would still be required. Overall, the impacts identified for the proposed project related to tribal cultural resources would be similar under the Buildout Pursuant to Existing General Plan Alternative to the proposed project.

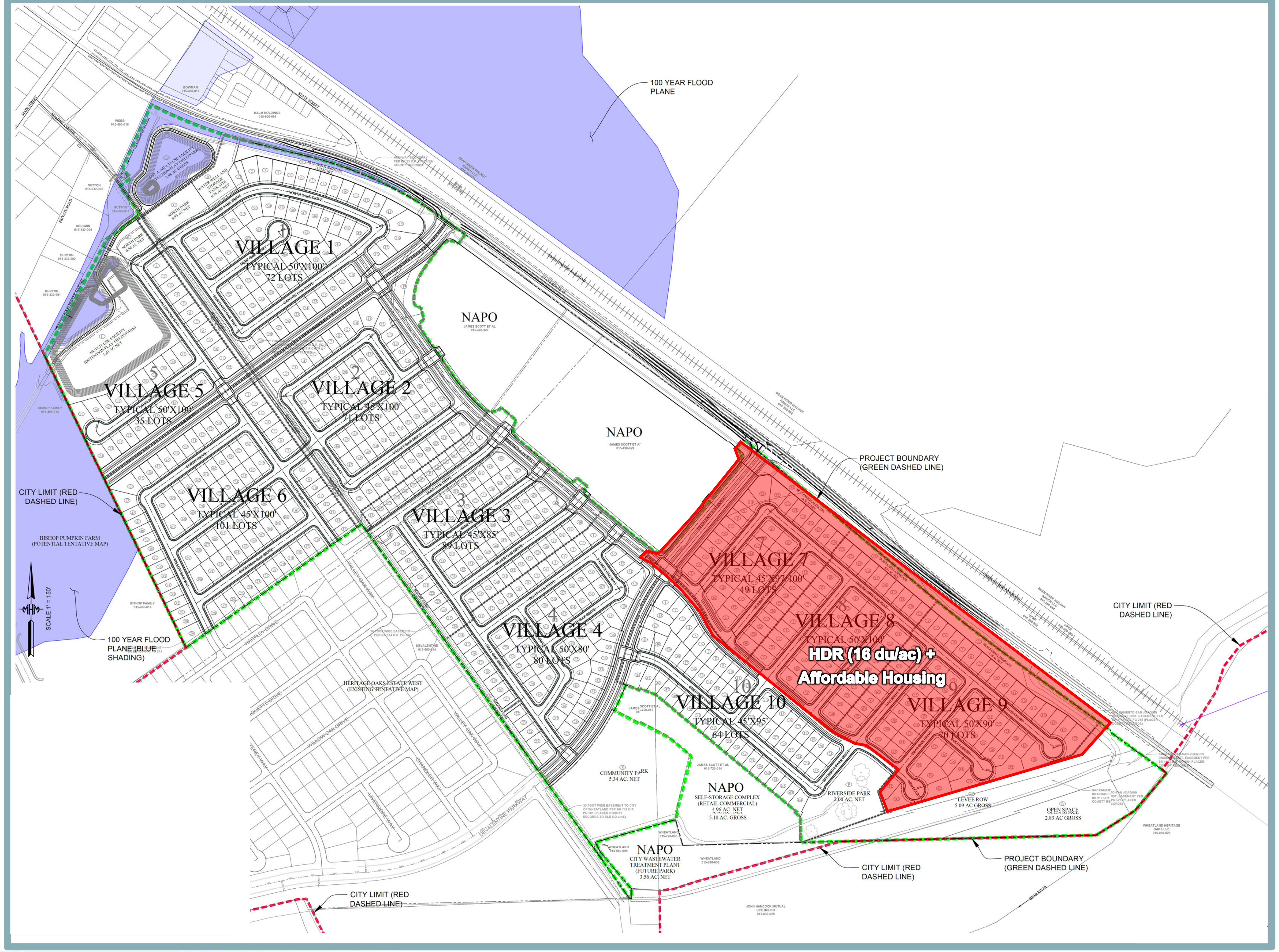
Utilities and Service Systems

Because the development area would be similar to the proposed project, and with compliance with applicable standards and regulations, the Alternative's stormwater management system would not be expected to alter the existing drainage pattern in such a manner that would result in flooding on- or off-site, as the project design and compliance with applicable regulations would ensure runoff from the developed project site would be adequately conveyed to the proposed discharge locations without resulting in flooding. Additionally, runoff from new impervious surfaces would likely be captured through on-site detention prior to discharge, similar to the proposed project. However, the design of the stormwater drainage system for the Alternative is currently unknown and, thus, could result in flows that exceed existing or planned stormwater drainage system capacity. Mitigation Measure 4.5-5, which requires submittal of a final drainage plan, would still be required. Overall, impacts related to utilities and service systems would be similar under the Buildout Pursuant to Existing General Plan Alternative to the proposed project.

Increased Density Alternative

Under the Increased Density Alternative, Villages 7, 8, and 9, identified in Figure 6-1 by the color red, would be developed with high-density, affordable multi-family residences, as compared to the currently proposed low-medium to medium density residences.

Figure 6-1
Increased Density Alternative Land Use Plan



Villages 7, 8, and 9 were selected for high-density affordable residential development under the Alternative due to the location of the villages, which are furthest away from the existing single-family residences to the north of the project site, in close proximity (i.e., providing easy access) to State Route (SR) 65, and adjacent to parcels designated for high-density residential and commercial development. Thus, development of Village 7, 8, and 9 with high-density residential uses would be compatible with the nearby planned development and would be most suitable for high-density and affordable housing compared to the remainder of the project site.

The Increased Density Alternative would require the approval of a General Plan Amendment to change the General Plan land use designation of the indicated portions of the project site to High Density Residential (HDR). The HDR land use designation allows densities of 8.1 to 16.0 du/ac. The Increased Density Alternative would include the development of the identified portions of the project site at a density of 16.0 du/ac, the maximum allowable density within the HDR land use designation. The low-medium and medium density residences proposed within the remainder of the project site would not be modified as part of the Alternative. Villages 7, 8, and 9 are 7.47 acres, 8.08 acres, and 11.99 acres in size, respectively. As such, a maximum of 440 HDR units would be developed on the identified portions of the site, while the remaining Villages, as currently proposed, would include a total of 512 units within the proposed LMDR and MDR designations.

A total of 952 overall residential units would be developed under the Increased Density Alternative at an overall residential density of 6.4 du/ac, which would be an increase of 267 residential units compared to the proposed project.

The proposed development area of the project site would not change under the Increased Density Alternative, and all other site improvements required under the proposed project would still be developed under the Increased Density Alternative, including an internal roadway network and utilities improvements. The Increased Density Alternative would also include the same type and amount of the open space areas as the proposed project.

In addition, the Alternative would still require the approval of a General Plan Amendment, Rezone and General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review. All project objectives would be met by the Increased Density Alternative.

Air Quality and Greenhouse Gas Emissions

While the Increased Density Alternative would include the same residential development as the proposed project throughout the majority of the project site, the Alternative would involve the development of 267 more residential units. The increase in residential units and associated increase in vehicle trips and energy usage would result in an associated increase in operational criteria pollutant and GHG emissions compared to the proposed project. Thus, operation of the Increased Density Alternative would still result in emissions of ROG and NO_X that exceed the applicable FRAQMD thresholds of significance, and Mitigation Measures 4.1-2(a) and (b) would be required. For similar reasons as explained in Chapter 4.1, even with implementation of the aforementioned mitigation measures, the impact would remain significant and unavoidable. Therefore, the significant and unavoidable impacts related to air quality would still occur under the Increased Density Alternative.

With respect to GHG emissions, the Alternative would be consistent with the majority of the applicable City CAP requirements. However, because detailed site plans have not been developed for the Alternative, the inclusion of traffic calming and congestion management infrastructure cannot be ensured. Therefore, similar to the proposed project, the Increased Density Alternative could conflict with the related measure, and Mitigation Measure 4.1-6 would still be required.

Overall, because the Alternative would result in increased operational criteria pollutant and GHG emissions, impacts related to air quality and GHG emissions under the Increased Density Alternative would be greater than the proposed project, and the significant and unavoidable impacts would still occur.

Transportation

Similar to the proposed project, the Increased Density Alternative would add construction vehicle traffic to area roadways, thereby potentially conflicting with a program, plan, ordinance, or policy addressing the circulation system during construction activities. As such, Mitigation Measure 4.3-1, which requires the project applicant to prepare a traffic control plan, would still be required under the Alternative.

While the Alternative would include the same residential uses as the proposed project throughout the majority of the project site, the Increased Density Alternative would incorporate high-density, affordable units on a portion of the site, which are both California Air Pollution Control Officers Association (CAPCOA) VMT reduction strategies, and thus, would result in a reduction in VMT as compared to the proposed project. Specifically, according to VMT reduction calculations based on the CAPCOA handbook, and without the inclusion of any project-inherent features that would result in reduced VMT per capita, the Increased Density Alternative could result in an estimated 19.44 percent reduction from the unmitigated VMT per capita associated with the proposed project of 30.38, resulting in a VMT per capita of 24.47, which would be below the applicable threshold of 27.45 VMT per capita. Therefore, the Increased Density Alternative would reduce the VMT per capita to below the applicable threshold of significance, and Mitigation Measure 4.3-3 would not be required.

Overall, impacts related to transportation under the increased Density Alternative would be fewer than the proposed project, and one of the significant impacts identified for the proposed project would not occur.

Tribal Cultural Resources

While the Increased Density Alternative would result in the development of 267 more residential units that the proposed project, all other components would be the same under the Alternative, and the overall development area would not change. As such, the Alternative's potential to cause a substantial adverse change in the significance of a tribal cultural resource would be the same as the proposed project, and Mitigation Measures 4.4-1(a) through (c), which require appropriate measures should Tribal Cultural Resources be discovered on-site during ground-disturbing activities, would still be required. Overall, the impacts identified for the proposed project related to tribal cultural resources would be similar under the Increased Density Alternative to the proposed project.

Utilities and Service Systems

Because the development area would be similar to the proposed project, and with compliance with applicable standards and regulations, the Alternative's stormwater management system would not be expected to alter the existing drainage pattern in such a manner that would result in flooding on- or off-site, as the project design and compliance with applicable regulations would ensure runoff from the developed project site would be adequately conveyed to the proposed discharge locations without resulting in flooding. Additionally, runoff from new impervious surfaces would likely be captured through on-site detention prior to discharge, similar to the proposed project. However, the design of the stormwater drainage system for the Alternative is currently unknown and, thus, could result in flows that exceed existing or planned stormwater drainage system capacity. Mitigation Measure 4.5-5, which requires submittal of a final drainage plan, would still be required.

Overall, impacts related to utilities and service systems would be similar under the Increased Density Alternative to the proposed project.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR is required to identify the environmentally superior alternative from among the range of reasonable alternatives that are evaluated. The environmentally superior alternative is generally the alternative that would be expected to generate the least amount of significant impacts. However, the lead agency may consider certain issue areas at a higher priority than others. Identification of the environmentally superior alternative is an informational procedure and the alternative selected may not be the alternative that best meets the goals or needs of the City. Section 15126(e)(2) of the CEQA Guidelines requires that an environmentally superior alternative be designated and states, “If the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.”

Although the No Project (No Build) Alternative would not meet any of the project objectives, the project site is assumed to remain in its current condition under the Alternative and none of the impacts resulting from the proposed project would occur under the Alternative, as shown in Table 6-3 below. As such, the No Project (No Build) Alternative would be considered the environmentally superior alternative. In accordance with Section 15126(e)(2) of the CEQA Guidelines, if the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

The Buildout Pursuant to Existing General Plan Alternative would only partially meet Objectives 1, 9, and 10, but would meet the remaining project objectives. The Buildout Pursuant to Existing General Plan Alternative would result in similar impacts compared to the proposed project, with fewer impacts related to air quality and GHG emissions. However, the significant and unavoidable impacts identified for the proposed project would still remain under the Buildout Pursuant to Existing General Plan Alternative. Given that the Buildout Pursuant to Existing General Plan Alternative is also a form of a no project alternative in accordance with Section 15126(e)(2) of the CEQA Guidelines, the Buildout Pursuant to Existing General Plan Alternative could not be considered that environmentally superior alternative.

As a result, the Increased Density Alternative would be considered the Environmentally Superior Alternative. Because the Increased Density Alternative would generally result in similar development as the proposed project, with the addition of high-density and affordable residential units, all project objectives would be met. As discussed throughout this chapter and shown in Table 6-3, the Increased Density Alternative would result in similar impacts as the proposed project related to most resource areas, greater impacts related to air quality and GHG emissions, and fewer impacts related to transportation. The significant and unavoidable impacts identified for the proposed project would remain under the Increased Density Alternative. It should be noted that the VMT reduction strategies included in the Increased Density Alternative, as set forth by

CAPCOA also reduce GHG emissions, considered co-benefits, by reducing the source metric of VMT (i.e., vehicle ownership, number of vehicle trips, and trip distance).

Table 6-3
Comparison of Environmental Impacts for Project Alternatives

Resource Area	Proposed Project	No Project (No Build) Alternative	Buildout Pursuant to Existing General Plan Alternative	High Density Affordable Housing Alternative
Air Quality and Greenhouse Gas Emissions	Less-Than-Significant with Mitigation and Significant and Unavoidable	None	Fewer*	Greater*
Transportation	Less-Than-Significant with Mitigation	None	Similar	Fewer
Tribal Cultural Resources	Less-Than-Significant with Mitigation	None	Similar	Similar
Utilities and Service Systems	Less-Than-Significant with Mitigation	None	Similar	Similar
Total Greater:		**0**	**0**	**1**
Total Fewer:		**4**	**1**	**1**
Total Similar:		**0**	**3**	**2**

Note: No Impact = "None;" Greater than the Proposed Project = "Greater," Less than Proposed Project = "Fewer;" and Similar to Proposed Project = "Similar"

* Significant and Unavoidable impact(s) determined for the proposed project would still be expected to occur under the Alternative.

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Appendix A

City of Wheatland

111 C Street– Wheatland, California 95692
Tel (530) 633-2761 – Fax (530) 633-9102

DATE: March 29, 2024

TO:
California State Clearinghouse
Responsible and Trustee Agencies
Interested Parties and Organizations

SUBJECT: **NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND SCOPING MEETING FOR THE HERITAGE OAKS ESTATES EAST PROJECT**

REVIEW PERIOD: March 29, 2024 through April 29, 2024

The City of Wheatland Community Development Department is the lead agency for the preparation of an Environmental Impact Report (EIR) for the development of the Heritage Oaks Estates East Project (proposed project). The scope of the EIR has been proposed based on a determination by the City of Wheatland. The City of Wheatland has directed the preparation of this EIR in compliance with the California Environmental Quality Act (CEQA).

Once a decision is made to prepare an EIR, the lead agency must prepare a Notice of Preparation (NOP) to inform all responsible and trustee agencies that an EIR will be prepared (CEQA Guidelines, Section 15082). The purpose of the NOP is to provide agencies with sufficient information describing both the proposed project and the potential environmental effects to enable the agencies to make a meaningful response as to the scope and content of the information to be included in the EIR. The City of Wheatland is also soliciting comments on the scope of the EIR from interested parties and organizations.

NOP COMMENT PERIOD: Written comments should be submitted at the earliest possible date, but not later than 5:00 PM on April 29, 2024, to Kevin Valente, Senior Planner, Wheatland Community Development Department, 111 C Street, Wheatland, CA 95692, (916) 372-6100, fax (916) 419-6108, or kvalente@raneymanagement.com.

SCOPING MEETING: A public scoping meeting will be held by the City to inform agencies and interested parties regarding the EIR for the proposed project, and to provide agencies and the public with an opportunity to provide comments on the scope of the EIR. The scoping meeting will be held in-person at the following address on April 25, 2024 at 6:00 PM:

Wheatland Community Center
101 C Street
Wheatland, CA 95692

PROJECT DESCRIPTION

Project Location and Setting

The approximately 148.70-acre project site, identified by Assessor's Parcel Numbers (APNs) 015-490-023 through -028 and 015-720-009 through -013, is located west of State Route (SR) 65 and south of Main Street in the City of Wheatland, California, and is currently undeveloped (see Figure 1). Surrounding existing uses include the Grasshopper Slough, single-family residences, multi-family residences, and commercial uses to the north; Union Pacific Railroad (UPRR) tracks and agricultural land to the east, across SR 65; Bear River, the City of Wheatland Wastewater Treatment Plant (WWTP), and agricultural land to the south; and agricultural land, undeveloped land, and Bishop's Pumpkin Farm to the west (see Figure 2). The City of Wheatland General Plan designates the site as Low Density Residential (LDR) and Park, and the project site is zoned Planned Development (PD).

Project Background

An EIR was originally prepared in 2002 for the entire Heritage Oaks Estates project, which included the project site as well as the 92-acre Heritage Oaks Estates West site. The 2002 project required approval of Annexation into the City of Wheatland, a General Plan Amendment, and a Rezone. The Heritage Oaks Estates site was later divided into Heritage Oaks Estates West and Heritage Oaks Estates East. An Initial Study was prepared for the Heritage Oaks Estates East project in 2005, and City Council approved a Development Agreement and Tentative Subdivision Map; however, both entitlements have since expired. The EIR prepared for the proposed project will only include an analysis of the Heritage Oaks Estates East project site.

Project Components

The proposed project would generally include the development of the project site with up to 685 single-family residences, as well as various associated improvements, including, but not limited to, several community parks, a landscape corridor, open space, an internal roadway system, and various landscaping and utility improvements.

The proposed project would require City approval of a General Plan Amendment, Rezone and associated General Development Plan, Vesting Tentative Subdivision Map, and Site Plan and Design Review, as discussed below.

Figure 1
Regional Project Location

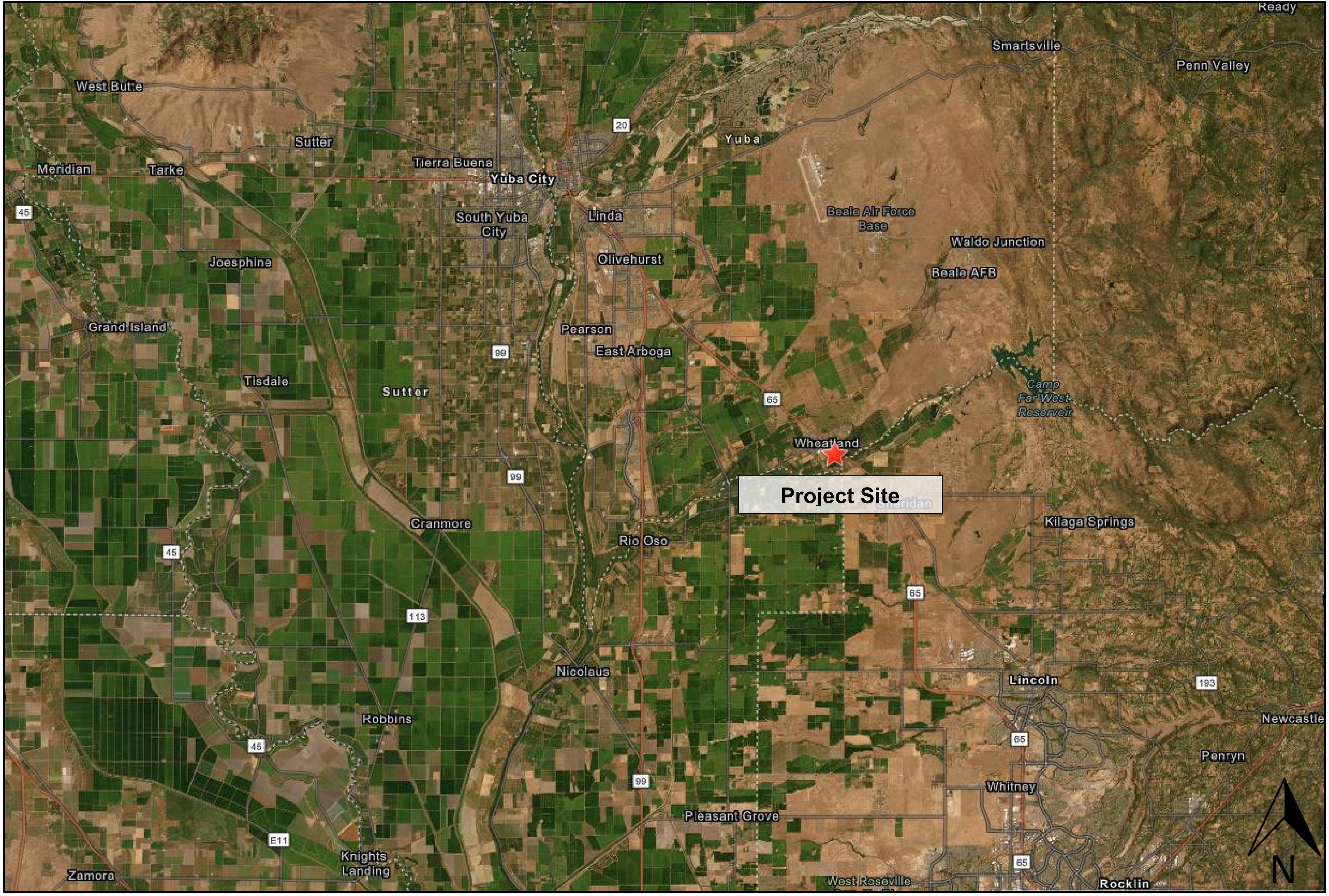


Figure 2
Project Location

General Plan Amendment

Due to the project's proposed lot sizes, the proposed project would require approval of a General Plan Amendment to change the site's designation from LDR to Low-Medium Density Residential (LMDR) and Medium Density Residential (MDR). The LMDR designation provides for single-family detached residences, secondary residential units, public and quasi-public uses, and similar compatible uses within a density range of 4.1 to 6.0 dwelling units per acre (du/ac). The MDR land use designation provides for the same residential uses, as well as single-family attached residences, within a density range of 6.1 to 8.0 du/ac. The net density of the residential villages would be 6.51 du/ac, while the gross density based on the total acreage would be 4.58 du/ac.

Rezone and General Development Plan

The proposed project would require approval of a Rezone to amend the PD zoning district and establish site-specific development standards. Pursuant to Section 18.51.060 of the Wheatland Municipal Code, the uses within the PD zoning district shall be limited to the uses contained within the approved development plan and pre-existing uses, as defined by Chapter 18.70 of the Municipal Code. Accordingly, the Heritage Oaks Wheatland General Development Plan has been prepared to establish the design standards for the site with specific criteria to assist the City in its review of the proposed project. Unless otherwise specified within the General Development Plan, such as variations in lot sizes and setback lengths, the proposed project would adhere to all applicable City zoning and Municipal Code requirements. Such standards and regulations are designed to reflect site characteristics, as well as establish development and design objectives that differ from the City's typical development standards for the proposed on-site uses.

Vesting Tentative Subdivision Map

The proposed Vesting Tentative Subdivision Map includes subdivision of the site into 681 single-family residential lots (see Figure 3). The single-family residential lots would be grouped into 10 "villages," which would each include between 35 and 101 lots. A summary of each village's lot sizing, acreage, number of lots, and density is included in Table 1 below. It should be noted that, for conservative purposes, the environmental analysis for the proposed project will be based on development of up to 685 residential units.

Parks, Open Space, and Landscaping

The proposed project would include approximately 25 acres of open space and recreational areas, including four parks, the Malone Paseo, and passive open space. The four parks would range in size from approximately 2.0 to 9.9 acres. The northernmost park would consist of lots A, C, K, and L, totaling approximately 9.9 acres, located adjacent to Grasshopper Slough. The park would be designed as a community park and include a play structure, lawn games, sport courts, and multi-use areas that would provide sports play field areas while also serving as a stormwater and water quality control basin.

Figure 3
Vesting Tentative Subdivision Map

VESTING TENTATIVE SUBDIVISION MAP
TSTM 2023-0001 (LARGE AND SMALL LOT)
HERITAGE OAKS ESTATES - EAST
WHEATLAND, CALIFORNIA
NOVEMBER 2022 - REVISED MARCH 25, 2024
PAGE 1 OF 4

LAND USE SUMMARY

VILLAGE AND LOT SUMMARY*

VILLAGE 1 (50'X100' TYP) =	72 LOTS	13.00 AC	5.54 DU/AC
VILLAGE 2 (45'X100' TYP) =	71 LOTS	10.56 AC	6.72 DU/AC
VILLAGE 3 (45'X85' TYP) =	89 LOTS	11.05 AC	8.05 DU/AC
VILLAGE 4 (50'X80' TYP) =	80 LOTS	11.11 AC	7.20 DU/AC
VILLAGE 5 (50'X100' TYP) =	35 LOTS	06.00 AC	5.83 DU/AC
VILLAGE 6 (45'X100' TYP) =	101 LOTS	15.67 AC	6.45 DU/AC
VILLAGE 7 (45'X97' TYP) =	49 LOTS	07.47 AC	6.56 DU/AC
VILLAGE 8 (50'X100' TYP) =	50 LOTS	08.08 AC	6.19 DU/AC
VILLAGE 9 (50'X90' TYP) =	70 LOTS	11.99 AC	5.84 DU/AC
VILLAGE 10 (45'X95' TYP) =	64 LOTS	09.73 AC	6.58 DU/AC
SUBTOTAL =	681 LOTS**	104.66 AC	6.51 DU/AC
MAJOR ROAD - DEVALENTINE PKWY		3.94 AC	
MAJOR ROAD - RED OAK DRIVE		3.73 AC	
MAJOR ROAD - HERITAGE OAK WAY		3.40 AC	
LOT A - DETENTION/PARK		2.98 AC	
LOT B - WATER WELL SITE #1		0.78 AC	
LOT C - NORTH PARK (EAST)		0.93 AC	
LOT D - MALONE PASEO (NORTH)		0.85 AC	
LOT E - SR 65 PASEO/LANDSCAPE		1.33 AC	
LOT F - FUTURE MULTI-FAMILY		0.46 AC	
LOT G - MALONE PASEO (CENTRAL)		0.49 AC	
LOT H - MALONE PASEO (CENTRAL)		0.53 AC	
LOT I - MALONE PASEO (CENTRAL)		0.38 AC	
LOT J - MALONE PASEO (CENTRAL)		0.55 AC	
LOT K - NORTH PARK (WEST)		0.54 AC	
LOT L - MULTI-USE POND/PARK		5.41 AC	
LOT M - SR 65 PASEO/LANDSCAPE		0.78 AC	
LOT N - SR 65 PASEO/LANDSCAPE		0.51 AC	
LOT O - SR 65 PASEO/LANDSCAPE		1.19 AC	
LOT P - RIVERSIDE PARK		2.00 AC	
LOT Q - LEVEE ROW		5.09 AC	
LOT R - RIVERSIDE OPEN SPACE		2.83 AC	
LOT S - COMMUNITY PARK		5.34 AC	
SUBTOTAL =		44.04 AC	
TOTAL =		148.70 AC	4.58 DU/AC**

*ALL ACREAGES AND DENSITIES EXCLUDE MAJOR ROADS.
**ENTITLEMENTS ARE BASED ON 685 LOTS AND GROSS DENSITY OF 4.61 DU/AC.

SURVEYORS STATEMENT:
I HEREBY STATE THAT ALL EASEMENTS OF RECORD ARE SHOWN AND LABELED PER PRELIMINARY TITLE REPORT BY FIRST AMERICAN TITLE COMPANY ORDER NUMBER 5102-5933317 DATED DECEMBER 30, 2021.

SEAN M. MINARD No. C52593 Exp. 12-31-24 CIVIL

SEAN MINARD, P.E. 52593, P.L.S. 8397

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF WHEATLAND, COUNTY OF YUBA, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL ONE:
LOTS A, B, C, 1, 2, 4, AND 5, AS SHOWN ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STATE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

APN: 015-490-023, 015-490-024, 015-490-025, 015-490-026, 015-490-028, 015-720-009, 015-720-010, 015-720-011, 015-720-012 & 015-720-013.

PARCEL TWO:
THE STREETS SHOWN AS HERITAGE OAKS PARKWAY, BLUE OAK PARKWAY AND DEVALENTINE PARKWAY ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STATE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

APN 015-490-030-000

CITY OF WHEATLAND APPROVAL:
THE CITY OF WHEATLAND PLANNING COMMISSION HAS CONSIDERED AND APPROVED RESOLUTION 24-0XX APPROVING TENTATIVE PARCEL MAP NO. 2023-0001 DURING THE PLANNING COMMISSION MEETING ON __________, 2024.

CITY OF WHEATLAND DATE:

SUBDIVIDER STATEMENT

OWNER
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

APPLICANT
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

ENGINEER/SURVEYOR
MHM INCORPORATED
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
CONTACT: SEAN MINARD, P.E., P.L.S.
PHONE: (530) 742-6485

ASSESSOR'S PARCEL NO.
015-490-023, 024, 025, 026, 028, AND 030
015-720-009, 010, 011, 012, AND 013

AREA OF TENTATIVE MAP
148.70 GROSS ACRE

EXISTING USE
VACANT

EXISTING GENERAL PLAN DESIGNATION
LOW DENSITY RESIDENTIAL

PROPOSED GENERAL PLAN DESIGNATION
LOW-MEDIUM DENSITY RESIDENTIAL
MEDIUM DENSITY RESIDENTIAL

EXISTING ZONING
PD

PROPOSED ZONING
PD

LEVEE PROTECTION
RECLAMATION DISTRICT NO. 2103

SCHOOL DISTRICT - HIGH SCHOOL
WHEATLAND UNION HIGH SCHOOL DIST
WESTERN PLACER UNIFIED SCHOOL DIST

SCHOOL DISTRICT - ELEMENTARY
WHEATLAND ELEMENTARY SCH DIST
WESTERN PLACER UNIFIED SCH DIST

FIRE PROTECTION
WHEATLAND FIRE AUTHORITY

SANITARY SEWER
CITY OF WHEATLAND

DOMESTIC WATER
CITY OF WHEATLAND

STORM DRAINAGE
CITY OF WHEATLAND

ELECTRICITY
PACIFIC GAS AND ELECTRIC

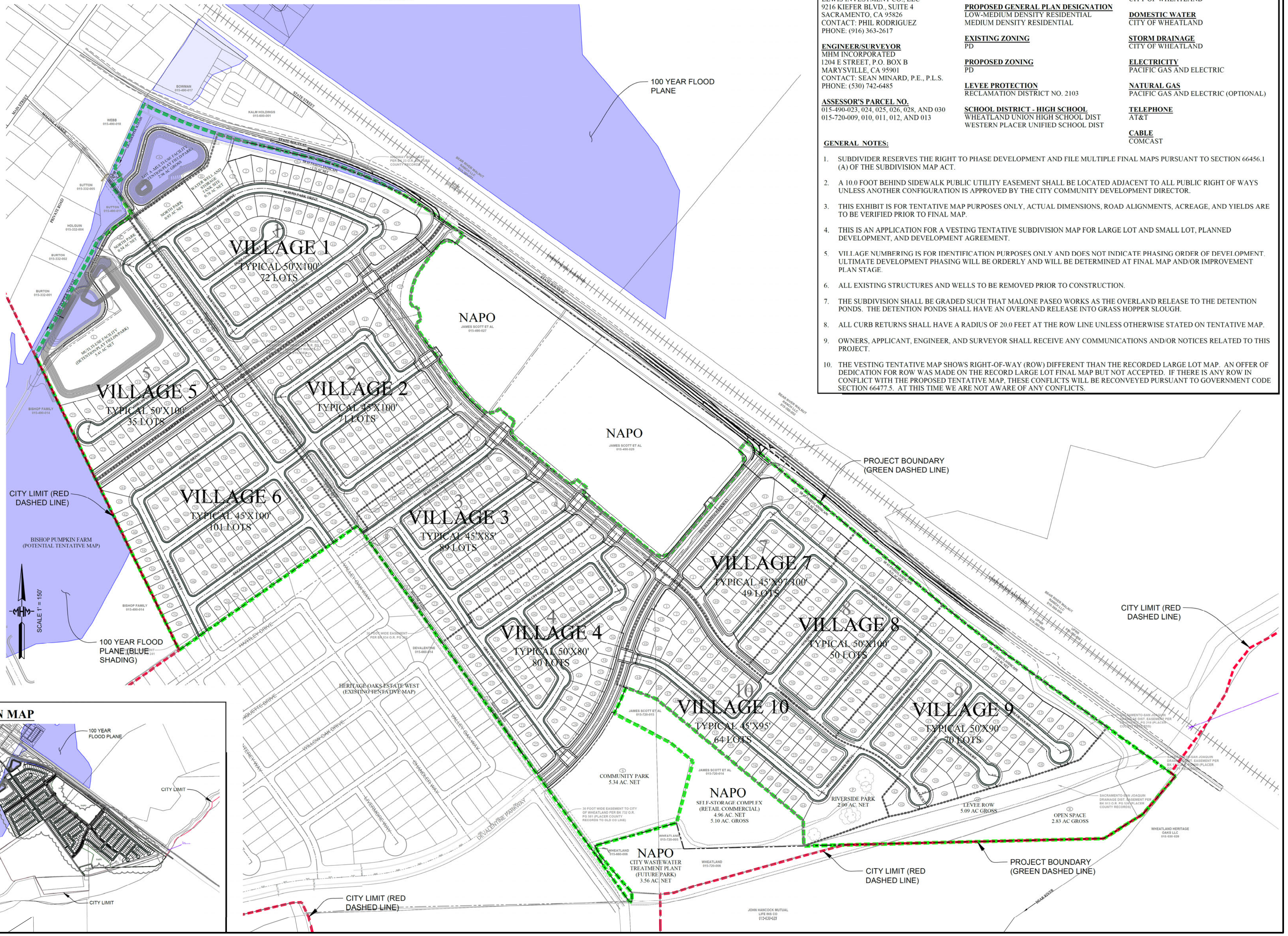
NATURAL GAS
PACIFIC GAS AND ELECTRIC (OPTIONAL)

TELEPHONE
AT&T

CABLE
COMCAST

GENERAL NOTES:

1. SUBDIVIDER RESERVES THE RIGHT TO PHASE DEVELOPMENT AND FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.1 (A) OF THE SUBDIVISION MAP ACT.
2. A 10.0 FOOT BEHIND SIDEWALK PUBLIC UTILITY EASEMENT SHALL BE LOCATED ADJACENT TO ALL PUBLIC RIGHT OF WAYS UNLESS ANOTHER CONFIGURATION IS APPROVED BY THE CITY COMMUNITY DEVELOPMENT DIRECTOR.
3. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY, ACTUAL DIMENSIONS, ROAD ALIGNMENTS, ACREAGE, AND YIELDS ARE TO BE VERIFIED PRIOR TO FINAL MAP.
4. THIS IS AN APPLICATION FOR A VESTING TENTATIVE SUBDIVISION MAP FOR LARGE LOT AND SMALL LOT, PLANNED DEVELOPMENT, AND DEVELOPMENT AGREEMENT.
5. VILLAGE NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING WILL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.
6. ALL EXISTING STRUCTURES AND WELLS TO BE REMOVED PRIOR TO CONSTRUCTION.
7. THE SUBDIVISION SHALL BE GRADED SUCH THAT MALONE PASEO WORKS AS THE OVERLAND RELEASE TO THE DETENTION PONDS. THE DETENTION PONDS SHALL HAVE AN OVERLAND RELEASE INTO GRASS HOPPER SLOUGH.
8. ALL CURB RETURNS SHALL HAVE A RADIUS OF 20.0 FEET AT THE ROW LINE UNLESS OTHERWISE STATED ON TENTATIVE MAP.
9. OWNERS, APPLICANT, ENGINEER, AND SURVEYOR SHALL RECEIVE ANY COMMUNICATIONS AND/OR NOTICES RELATED TO THIS PROJECT.
10. THE VESTING TENTATIVE MAP SHOWS RIGHT-OF-WAY (ROW) DIFFERENT THAN THE RECORDED LARGE LOT MAP. AN OFFER OF DEDICATION FOR ROW WAS MADE ON THE RECORD LARGE LOT FINAL MAP BUT NOT ACCEPTED. IF THERE IS ANY ROW IN CONFLICT WITH THE PROPOSED TENTATIVE MAP, THESE CONFLICTS WILL BE RECONVEYED PURSUANT TO GOVERNMENT CODE SECTION 66477.5. AT THIS TIME WE ARE NOT AWARE OF ANY CONFLICTS.



LOCATION MAP

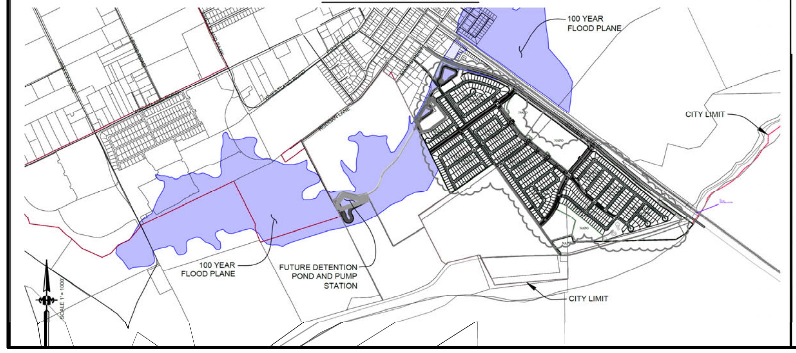


Table 1
Project Residential Summary Table

Village	Typical Lot Size (feet)	Number of Lots	Acreage	Density (du/ac)
1	50 x 100	72	13.00	5.54
2	45 x 100	71	10.56	6.72
3	45 x 85	89	11.05	8.05
4	50 x 80	80	11.11	7.20
5	50 x 100	35	6.00	5.84
6	45 x 100	101	15.67	6.45
7	45 x 97	49	7.47	6.56
8	50 x 100	50	8.08	6.19
9	50 x 90	70	11.99	5.84
10	45 x 95	64	9.67	6.58
	Totals	**681**	**104.66**[1]	**6.51**

[1] The remaining site acreage would be developed with various landscaping, roadway, and utility improvements, as discussed below.

An approximately two-acre park identified on the Vesting Tentative Subdivision Map as Riverside Park would be located adjacent to Villages 9 and 10 in the southern portion of the site and include preserved oak trees surrounded by benches and tables to create a picnic area. An approximately 5.1-acre park would be located between Village 4 and the WWTP, though the park may be expanded in the future following the repurposing of the WWTP. The park would be designed as a community park and include play structures, sports courts, and sports play fields. On lots Q and R, south of Village 9, would include Approximately 7.9 acres of passive recreation area adjacent to the Bear River would be provided on lots Q and R, south of Village 9.

In addition, the proposed project would include the development of the approximately 2.80-acre Malone Paseo trail corridor, which would run adjacent to Malone Avenue throughout the central portion of the site to link the north and south villages. The paseo would include a 10-foot-wide meandering multi-use pathway and a landscape strip along one street edge. Furthermore, an approximately 4.62-acre landscape corridor located along SR 65 to the east would provide a buffer between the proposed residences and SR 65 and include a combination of landscaping and meandering sidewalks, as well as a six-foot concrete masonry wall.

Each residential lot would include front yard landscaping along the street between the front curb and the face of the residences with a minimum of one tree and one shrub. Residential lots with side yards adjacent to the public street or visible to the public would include a planter area along the private fencing. Turf from drought-resistant sod would be provided in areas of high visibility to provide a permanent green area within the landscaped yard.

Circulation

Site access would be provided by Malone Avenue, which runs in a northwest-to-southeast direction through the project site and continues to travel southeast as a portion of the project site's western boundary. The proposed project would also include development of two roadways, DeValentine Parkway and Red Oak Drive, which would connect to SR 65 at the project site's eastern boundary, and provide two additional access points to the project site.

The proposed internal collector streets would connect to form a semi-grid pattern within the project site, and would provide access to the proposed residential units and parks.

The proposed project would include a multimodal network for pedestrians and bicyclists by way of the Malone Paseo trail corridor and SR 65 landscape corridor. Malone Paseo would provide an internal north-to-south connection between the proposed residential units along Malone Avenue. The corridor would include a 10-foot-wide meandering pathway for pedestrian and bicycle uses, and a landscape strip along one street edge. Sidewalk connections would also be provided throughout the site's internal roadway network.

Utilities

The proposed project would include new connections to existing utility infrastructure in the vicinity of the project site. Water, sanitary sewer, and storm drainage services would be provided by the City of Wheatland. Gas and electricity services would be provided by the Pacific Gas and Electric Company (PG&E). Finally, telecommunications and cable services would be provided by AT&T and Comcast.

Site Plan and Design Review

Pursuant to City of Wheatland Municipal Code Chapter 18.67, residential development projects with more than four units are subject to the City's Site Plan and Design Review process. The City's Site Plan and Design Review process allows various City departments or public agencies, such as the fire district, city engineer, police department, building department, public works, planning director and any other affected city departments or public agencies, to evaluate the proposed project's compliance with the City of Wheatland's standards and regulations.

Project Entitlements

The entitlements requested with the application for the Heritage Oaks Estates East Project include the following:

- General Plan Amendment from LDR to MDR;
- Rezone to amend the PD zoning district and General Development Plan to establish site development standards;
- Vesting Tentative Subdivision Map; and
- Site Plan and Design Review.

ENVIRONMENTAL EFFECTS

The following paragraphs provide a general discussion of the anticipated topics that will be included in the technical sections of the EIR. Each technical section will include an analysis of the existing environmental setting, identification of the thresholds of significance, description of the methodology used for analysis, identification of impacts, and the development of mitigation measures and monitoring strategies, if necessary, to reduce impacts.

Air Quality and Greenhouse Gas Emissions

The air quality and greenhouse gas (GHG) emissions analysis for the proposed project will be performed using the California Emissions Estimator Model (CalEEMod) software program and following the Feather River Air Quality Management District (FRAQMD) guidelines.

The air quality impact analysis will include a quantitative assessment of short-term (i.e., construction) and long-term (i.e., operational) increases of criteria air pollutant emissions of primary concern (i.e., reactive organic gases [ROG], nitrogen oxides [NO_X], and particulate matter [PM_{10}]). The project's cumulative contribution to regional air quality will be discussed, based in part on the modeling conducted at the project level. The project's cumulative contribution to regional air quality will be discussed, based in part on the modeling conducted at the project-level. The analysis will also address any potential odor impacts that may occur, as well as toxic air contaminant (TAC) emissions.

The GHG emissions analysis will include a quantitative estimate of carbon dioxide equivalent emissions from the proposed project, including indirect emissions (e.g., electricity, propane) and construction emissions. The chapter will include an analysis of the project's consistency with the City of Wheatland Climate Action Plan (CAP).

The significance of air quality and GHG impacts will be determined in comparison to FRAQMD significance thresholds. FRAQMD-recommended mitigation measures will be incorporated, if needed, to reduce any significant air quality impacts, and anticipated reductions in emissions associated with proposed mitigation measures will be quantified.

Noise

The Noise chapter of the EIR will be based on a project-specific Noise Study. The chapter will address potential noise impacts resulting from project construction and operation, including existing and future traffic noise levels on the local roadway network. Noise-sensitive land uses or activities in the project vicinity will be identified and ambient noise and vibration level measurements on, and in the vicinity of, the project site will be conducted to quantify existing background noise and vibration levels for comparison to the predicted project-generated levels. Operational noise levels will also be evaluated. Noise exposure levels will then be compared to applicable significance criteria in the City of Wheatland General Plan Noise Element, the City's Noise Ordinance, and CEQA. Feasible and appropriate mitigation measures to avoid or reduce adverse impacts will be identified, as needed.

Transportation

The Transportation chapter of the EIR will be based on a Traffic Impact Study prepared specifically for the proposed project. Impact determination for CEQA purposes will be based on vehicle miles traveled (VMT), consistent with CEQA Guidelines Section 15064.3, which became effective statewide on July 1, 2020. The VMT analysis will be quantitative in nature and will be prepared consistent with the City of Wheatland's current guidance regarding analysis of VMT.

The proposed project's impacts to alternative modes such as pedestrian, bicycle, and transit facilities, will be assessed based on significance criteria contained in the adopted City guidelines. The EIR chapter will also include an analysis of the project's potential impacts related to conflicting with applicable programs, policies, and ordinances addressing the circulation system, vehicle safety hazards, and emergency access. Feasible and appropriate mitigation measures to avoid or reduce adverse impacts will be identified, as needed.

Tribal Cultural Resources

The Tribal Cultural Resources chapter of the EIR will be based on a Cultural Resources Inventory and Evaluation Report prepared specifically for the proposed project, as well as input from Native American tribes as a result of consultation pursuant to Assembly Bill (AB) 52 and Senate Bill (SB) 18, the latter of which is required for the proposed project due to the proposed General Plan Amendment. The chapter will describe the potential effects to tribal cultural resources from buildout of the proposed project. Feasible and appropriate mitigation measures to avoid or reduce adverse impacts will be identified, as needed.

Utilities and Service Systems

The Utilities and Service Systems chapter will evaluate the project's impacts related to water supply, wastewater, stormwater drainage, and solid waste infrastructure and facilities. In addition, the chapter will evaluate the project's impacts related to dry utilities, such as electric power, natural gas, and telecommunications facilities.

Other Effects

All remaining CEQA Guidelines Appendix G Checklist topics will be addressed in the Other Effects chapter of the EIR. Accordingly, the Other Effects chapter of the EIR will address Aesthetics, Agricultural and Forestry Resources, Biological Resources, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, and Wildfire.

DISCUSSION OF CUMULATIVE IMPACTS

In accordance with Section 15130 of the CEQA Guidelines, an analysis of cumulative impacts associated with the proposed project will be undertaken and discussed. In addition, pursuant to Section 21100(B)(5) of the CEQA Guidelines, the cumulative analysis will address the potential for growth-inducing impacts associated with the proposed project and will focus on whether or not implementation of the proposed project would remove any existing impediments to growth.

DISCUSSION OF ALTERNATIVES

In accordance with Section 15126.6(a) of the CEQA Guidelines, several project alternatives, including the No Project Alternative, will be analyzed. For the proposed project EIR, the Alternatives section will evaluate at a minimum three alternatives: the No Project Alternative and two other alternatives, which will be determined during the preparation of the EIR.

The alternatives analysis will "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." The analysis will include sufficient information about each alternative to allow meaningful evaluation of, and comparison with, the proposed project. The significant effects of the alternatives will be discussed, but in less detail than the significant effects of the proposed project. The discussion will also identify and analyze the "environmentally superior alternative."

Appendix B

CALIFORNIA
Water Boards

Gavin Newsom
GOVERNOR

Yana Garcia
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

29 April 2024

Kevin Valente
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Community Development Department
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COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, HERITAGE OAKS ESTATES EAST PROJECT, SCH#2024031192, YUBA COUNTY

Pursuant to the State Clearinghouse's 29 March 2024 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Heritage Oaks Estates East Project, located in Yuba County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has

adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]
The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Clean Water Act Section 404 Permit
If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for

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[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.

Peter G. Minkel

Peter G. Minkel
Engineering Geologist

cc: State Clearinghouse unit, Governor’s Office of Planning and Research, Sacramento

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY **GAVIN NEWSOM,** GOVERNOR

CENTRAL VALLEY FLOOD PROTECTION BOARD
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May 3, 2024

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Subject: Comments for the Notice of Preparation of a Draft Environmental Impact Report, Heritage Oaks Estates East Project, SCH# 2024031192, Yuba County

The Central Valley Flood Protection Board (Board) appreciates the opportunity to comment on Notice of Preparation of a Draft Environmental Impact Report (DEIR) for the proposed Heritage Oaks Estates East Project (proposed project). The DEIR will be prepared to disclose and address potential environmental impacts associated with the proposed project.

A portion of the proposed project overlaps with Bear River, a regulated stream under Board jurisdiction, and its associated levee. Project activities within these areas will require an encroachment permit.

Responsibility of the Central Valley Flood Protection Board

The Board is the State's regulatory agency responsible for enforcing appropriate standards for the construction, maintenance, and operation of the flood control system that protects life, property, and habitat in California's Central Valley. The Board serves as the State coordinator between local flood management agencies and the federal government, with the goal of providing the highest level of flood protection possible to California's Central Valley.

The Board operates under authorities as described in California Water Code (Water Code), which requires the Board to oversee future modifications or additions to facilities of the State Plan of Flood Control (SPFC). In addition, pursuant to assurances provided to the United States Army Corps of Engineers (USACE) by the Board on behalf of the State, the USACE Operation and Maintenance Manuals, Code of Federal Regulations, Title 33, Section 208.10, and United States Code, Title 33, Section 408, the Board is responsible for the operation and maintenance of the SPFC facilities. The USACE requires the Board to serve as the lead non-Federal sponsor for projects to improve or alter facilities of the SPFC pursuant to Code of Federal Regulations, Title 33, Section 408. The State's objectives include fulfilling the USACE's expectations pursuant to the assurances provided to the USACE.

Encroachment Permit

Per California Code of Regulations, Title 23, Waters, Division 1 (Title 23), Section 6, approval by the Board is required for all proposed work or uses, including the alteration of levees within any area for which there is an Adopted Plan of Flood Control within the Board's jurisdiction. In addition, Board approval is required for all proposed encroachments within a floodway, on adjacent levees, and within any Regulated Stream identified in Title 23, Table 8.1. Specifically, Board jurisdiction includes the levee section, the waterward area between project levees, a minimum 10-foot-wide strip adjacent to the landward levee toe, the area within 30 feet from the top of bank(s) of Regulated Streams, and inside Board's Designated Floodways. Activities outside of these limits which could adversely affect Federal-State flood control facilities, as determined by Board staff, are also under the Board's jurisdiction. Permits may also be required for existing unpermitted encroachments or where it is necessary to establish the conditions normally imposed by permitting, including where responsibility for the encroachment has not been clearly established or ownership or uses have been changed.

Federal permits, including USACE Section 404 and Section 10 regulatory permits and Section 408 Permission, in conjunction with a Board permit, may be required for the proposed project. In addition to federal permits, state and local agency permits, certification, or approvals may also be required. State approvals may include, but are not limited to, California Department of Fish and Wildlife's Lake and Streamed Alteration Agreement and Central Valley Regional Water Quality Control Board's Section 401 Water Quality Certification and/or Waste Discharge Requirement. The Applicant must obtain all authorizations that the proposed project may require.

Flood Impacts Analysis
Pursuant to Section 15 of Title 23, the Board may deny an encroachment permit if the proposed project could:

- Jeopardize directly or indirectly the physical integrity of levees or other works
- Obstruct, divert, redirect, or raise the surface level of design floods or flows, or the lesser flows for which protection is provided
- Cause significant adverse changes in water velocity or flow regimen
- Impair the inspection of floodways or project works
- Interfere with the maintenance of floodways or project works
- Interfere with the ability to engage in flood fighting, patrolling, or other flood emergency activities
- Increase the damaging effects of flood flows
- Be injurious to, or interfere with, the successful execution, functioning, or operation of any adopted plan of flood control
- Adversely affect the State Plan of Flood Control, as defined in the California Water Code

As a responsible agency under the California Environmental Quality Act (CEQA), the Board will need to have adequate information in order to evaluate whether to issue a permit at a future date. It is therefore recommended that the environmental document include a specific flood impacts analysis section.

Closing
The potential risks to public safety, including increased flood risks, need to be considered when developing proposed projects that seek to modify flood control works or the hydrology of the water ways. Board staff is available to discuss any questions you have regarding the above

comments. Please contact Jordan Robbins at (916) 524-3454, or via email at Jordan.Robbins@CVFlood.ca.gov if you have any questions.

Sincerely,

Andrea Buckley

Andrea Buckley
Environmental Services and Land Management Branch Manager

cc: Office of Planning and Research
State.Clearinghouse@opr.ca.gov

STATE OF CALIFORNIA **Gavin Newsom, *Governor***

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
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(916) 373-3710
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April 02, 2024

Kevin Valente
City or Wheatland
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Wheatland CA 95692

Re: 2024031192, Heritage Oaks Estates East Project, Yuba County

Dear Mr. Valente:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of <u>portions</u> of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

- **a.** The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
- **b.** A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- **a.** Avoidance and preservation of the resources in place, including, but not limited to:
  - **i.** Planning and construction to avoid the resources and protect the cultural and natural context.
  - **ii.** Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- **b.** Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - **i.** Protecting the cultural character and integrity of the resource.
  - **ii.** Protecting the traditional use of the resource.
  - **iii.** Protecting the confidentiality of the resource.
- **c.** Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- **d.** Protecting the resource. (Pub. Resource Code §21084.3 (b)).
- **e.** Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
- **f.** Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

- **a.** The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
- **b.** The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
- **c.** The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    - **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    - **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    - **a.** If part or all of the APE has been previously surveyed for cultural resources.
    - **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
    - **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
    - **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    - **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    - **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@NAHC.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

cc: State Clearinghouse

Kevin Valente

From: Karen Sutton <suttonkaren@sbcglobal.net>
Sent: Friday, April 5, 2024 1:33 PM
To: Kevin Valente
Subject: Heritage Oaks Estates East subdivision Project review period

Hello Kevin,
I am Karen Sutton at 611 Malone Ave. in Wheatland, one of the four residents adjacent to this 'proposed subdivision'. My opinion is 'Don't do it". First, you must realize that the City of Wheatland has not taken care of its city streets to this day. Malone is one of the most important streets in town, all main services go down it, to the sewer plant, a major gas line, etc. I have lived here for 30 years, and my street Malone Ave. is in worse condition than when I moved here. What street there is floods and is abused by my neighbors and YSDI in its use. They drive across a muddy field tearing it up and onto the bit of blacktop that serves as Malone Ave. Do you think adding homes and crap like this will be good? It all looks like a copy of the plans for Lincoln, exactly. Before you put all that crap in my backyard, you better clean up what is going to service it. Besides, that ground is some of the most fertile farmland in California, stupid to put people on it. I do not want a subdivision so poorly planned in my backyard. Think before you dig
Mr. Rainy is the only one profiting from this "Project"

My number is 530-300-5604

Karen Sutton 'Artist'

From: Steven DeValentine <stevendevalentine@yahoo.com>
Sent: Monday, April 1, 2024 9:53 AM
To: Kevin Valente
Cc: Office@rdvfarms.com
Subject: Heritage Oaks East NOP

I have reviewed the NOP for the Heritage Oaks East (HOE) development and have some significant concerns regarding this project. We are the owners of the adjacent agricultural property to the south and west of HOE known as Heritage Oaks West (HOW). When the original development of HOE and HOW was planned the infrastructure trunk on Malone Avenue was to be sized to serve both HOE and HOW. If the current project limits the size of that supply trunk (essentially sewer and water) it will disallow the future development of HOW. If that occurs HOW will continue to be relegated to agricultural uses only. If that occurs, the City is obligated to maintain an agricultural buffer zone between HOE and our property as well as the Bishop property. In the past those buffer zones have been up to 300 feet. The current proposed HOE map allows no buffer which is unacceptable. We will be spraying insecticides, herbicides, and pesticides on our property as well as the noise of application. Applications will be by both ground and air. In addition we currently have a prescriptive right of way on Malone Ave. (in addition to ownership of the 1/2 of Malone adjacent to the east side of our property) to enter our property with large equipment and semi trucks. If that access is blocked we will need an alternate access to our property. The levee access will not allow entrance of large trucks and equipment.

Neither the developer or the City have contacted us regarding any of these issues.

I would like to discuss these issues with the developer, however, I have not received any notifications or contact information from them. I look forward to your response.

Steve DeValentine
DeValentine Family Partnership
DeValentine Orchards, Inc.
2890 Bear River Dr
Rio Oso, CA 95674
(530) 308-6449

From: Melinda Gallagher <mg1444@gmail.com>
Sent: Monday, April 1, 2024 8:39 PM
To: Kevin Valente
Subject: Re: Heritage Oaks development

Hi Kevin
Bees are listed as live stock by state and federal agriculture agencies, however because of their unique characteristics it's a live stock that cannot be contained within fences. They fly anywhere without restrictions. Up to 3 miles while forging for food and water , then return to the hive in the early evening.
During the spring and into early summer bees will fill their hives with new bees, if the colony becomes too large for the hive bees will make a new queen and split the hive in half.
The new queen takes half the colony away from the hive, making a swarm and they look for a new place to form a hive.
Swarms can be seen in trees hanging from tree limbs in a large clump of hundreds of bees.
I am not the only beekeeper in the immediate area. Like I mentioned there are two others, within a mile.
Bees play a very important role in almond pollination and because of the 15,000 plus acres of new almond orchards in Rio Oso, Nicolas, Sheridan, even northeast of Wheatland beekeepers have come to this area in large numbers.
Bees surround this area as new almonds are planted because the price is so good for farmers. It's a very good market that has not dropped in price for years now it's consistently a very good income. No one will likely turn away from a good income because of new houses in the area. Why should they, you wouldn't say no to a larger income would you. Bees are plentiful here by thousands and thousands of hives just in this small area.
People who live here are familiar with swarms and are not frightened or threatened by them it's normal to see a swarm in the spring, versus someone new to the area who may be alarmed enough to call the police or fire department.

Beekeeping is as solid a career as being a firefighter, police officer, or owning a hardware store. Beekeepers are career people, not hobbyists selling honey in the farmers market. They invest lots of money into their business, work all year pollinating crops and taking care of their hives.
I hope this helps.

Best regards
Melinda Gallagher
530 574-0442.

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Sent from my iPhone

> On Apr 1, 2024, at 12:52 PM, Kevin Valente <kvalente@raneymanagement.com> wrote:
> Hello Melinda,
>
> Your email is just fine for a written comment.
>
> I do have a follow up question. Do you have any specific concerns for the well being of your bees and what possible impacts could occur from a development nearby?
>
> Thank you.

>
> Kevin Valente, AICP
> Senior Planner
> Kvalente@raneymanagement.com
> phone. (916) 372-6100
> 1501 Sports Drive, Suite A Sacramento, CA 95834
> fax.   (916) 419-6108
> https://urldefense.proofpoint.com/v2/url?u=http-3A__www.raneymanagement.com&d=DwIFaQ&c=euGZstcaTDllvimEN8b7jXrwqOf-v5A_CdpgnVfiiMM&r=duOj9Yi52gd7hnqYg3sxYRWYv2objq2tL3v-g5US-bY&m=p7VNP7-OlWsSMx6qW8dk9_IWLV3gFVuxlkaqDrCcuv6mOsao7sU4207oz5XfO6Ig&s=ld3sLshdbn2SKX22J6h_kjErYlxdvlCiMRZ3EVDRRWg&e=
>
>
> -----Original Message-----
> From: Melinda Gallagher <mg1444@gmail.com>
> Sent: Monday, April 1, 2024 10:23 AM
> To: Kevin Valente <kvalente@raneymanagement.com>
> Subject: Heritage Oaks development
>
>
> Hello Kevin
>
> I would like to add to concerns about the proposed development .
>
> The area to the south and west a 1 mile radius from the proposed development there are three bee yards . Because Yuba county, Sutter county, and Placer county all meet at the Bear River there are different rules for each county.
> My bees are in Placer county on the river bottom, I have about 70 hives, Sutter county has a beekeeper 1/2 mile away with 200 + hives to the south and to the west about 3/4 of a mile there is a third beekeeper with about 100 hives in Yuba county.
>
>
>
> If I need to make this concern in a hand written letter please let me know I will be happy to do so.
>
> Best regards
> Melinda Gallagher
> 530 584-0442
>
>
>
>
>
> .
>
> Sent from my iPhone
> ----------
>
> This email has been scanned for spam and viruses by Proofpoint Essentials. Visit the following link to report this email as spam:
>
https://us3.proofpointessentials.com/app/report_spam.php?mod_id&mod_option=gitem&report=type?syspam&k=&p

Hi Kevin

Here’s a swarm from the 200 hives it just now happened. This same beekeeper has another 200 hives in the middle of this orchard   So about 400.

Melinda
530 574-0442

Sent from my iPhone

Hi Kevin
There 200 hives here it's Sutter county, middle of the road is placer county.
This is half mile away from the Yuba county heritage oaks proposal. The first photo shows a hive with a swarm that will happen in the next few days.
At the end of the road is the levee to the bear river it's half mile away, bees will travel 3 miles to forage.

I hope this gives you a idea of the amount of bees here.

Best regards
Melinda Gallagher

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Sent from my iPhone

Appendix C

Heritage Oaks Estates East Project v2 Custom Report

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4.7.1. Unmitigated

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Heritage Oaks Estates East Project v2
Construction Start Date	4/1/2025
Operational Year	2034
Lead Agency	City of Wheatland
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	21.0
Location	39.003174550138, -121.41987676256036
County	Yuba
City	Wheatland
Air District	Feather River AQMD
Air Basin	Sacramento Valley
TAZ	344
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Single Family Housing	685	Dwelling Unit	123	1,335,750	8,023,307	—	1,980	—
City Park	17.8	Acre	17.8	0.00	775,368	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.05	3.41	31.7	36.1	0.06	1.37	3.54	3.97	1.26	0.85	1.30	—	7,972	7,972	0.37	0.46	16.8	8,136
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.40	2.90	16.8	32.5	0.04	0.49	3.54	4.03	0.45	0.85	1.30	—	7,696	7,696	0.40	0.47	0.48	7,845
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.24	1.90	11.1	22.3	0.03	0.44	2.51	2.81	0.41	0.60	0.88	—	5,482	5,482	0.27	0.33	5.18	5,592
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.35	2.03	4.07	0.01	0.08	0.46	0.51	0.07	0.11	0.16	—	908	908	0.04	0.05	0.86	926

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.05	3.41	31.7	31.5	0.06	1.37	0.20	1.54	1.26	0.05	1.30	—	6,826	6,826	0.28	0.06	0.88	6,852
2026	3.39	2.82	15.2	36.1	0.04	0.43	3.54	3.97	0.40	0.85	1.25	—	7,972	7,972	0.37	0.46	16.8	8,136
2027	3.16	2.70	14.3	34.3	0.04	0.38	3.54	3.93	0.36	0.85	1.21	—	7,860	7,860	0.36	0.45	15.1	8,019
2028	3.02	2.57	13.5	32.9	0.04	0.34	3.54	3.89	0.32	0.85	1.17	—	7,744	7,744	0.25	0.45	13.6	7,898
2029	2.80	2.47	12.8	31.4	0.04	0.32	3.54	3.86	0.29	0.85	1.14	—	7,624	7,624	0.24	0.43	12.1	7,770
2030	2.68	2.28	12.5	30.2	0.04	0.30	3.54	3.84	0.26	0.85	1.11	—	7,505	7,505	0.23	0.41	10.7	7,645
2031	2.57	2.18	11.9	29.0	0.04	0.27	3.54	3.81	0.25	0.85	1.10	—	7,381	7,381	0.23	0.32	9.42	7,492
2032	2.46	2.08	11.4	27.9	0.04	0.25	3.54	3.79	0.23	0.85	1.08	—	7,263	7,263	0.21	0.31	8.20	7,367
2033	2.27	1.99	11.1	27.0	0.04	0.22	3.54	3.77	0.21	0.85	1.06	—	7,149	7,149	0.21	0.29	7.10	7,249
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.40	2.90	16.8	32.5	0.04	0.49	3.54	4.03	0.45	0.85	1.30	—	7,696	7,696	0.40	0.47	0.48	7,845
2026	3.13	2.64	15.8	30.9	0.04	0.43	3.54	3.98	0.40	0.85	1.25	—	7,597	7,597	0.30	0.46	0.44	7,743
2027	3.00	2.53	14.9	29.6	0.04	0.39	3.54	3.93	0.36	0.85	1.21	—	7,495	7,495	0.29	0.45	0.39	7,637
2028	2.88	2.42	14.1	28.5	0.04	0.34	3.54	3.89	0.32	0.85	1.17	—	7,387	7,387	0.27	0.45	0.35	7,528
2029	2.66	2.32	13.4	27.4	0.04	0.32	3.54	3.86	0.29	0.85	1.14	—	7,276	7,276	0.27	0.44	0.31	7,413
2030	2.55	2.14	12.9	26.4	0.04	0.30	3.54	3.84	0.26	0.85	1.11	—	7,164	7,164	0.25	0.42	0.28	7,296
2031	2.45	2.04	12.3	25.5	0.04	0.27	3.54	3.81	0.25	0.85	1.10	—	7,047	7,047	0.24	0.42	0.24	7,179
2032	2.26	1.96	11.8	24.6	0.04	0.25	3.54	3.79	0.23	0.85	1.08	—	6,934	6,934	0.23	0.41	0.21	7,062
2033	2.17	1.88	11.3	24.0	0.04	0.22	3.54	3.77	0.21	0.85	1.06	—	6,827	6,827	0.22	0.39	0.18	6,949
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.45	1.22	10.6	11.9	0.02	0.44	0.23	0.67	0.41	0.05	0.46	—	2,489	2,489	0.11	0.04	0.50	2,505
2026	2.24	1.90	11.1	22.3	0.03	0.31	2.50	2.81	0.28	0.60	0.88	—	5,482	5,482	0.27	0.33	5.18	5,592

2027	2.15	1.82	10.5	21.3	0.03	0.27	2.50	2.77	0.25	0.60	0.85	—	5,407	5,407	0.20	0.32	4.66	5,513
2028	2.07	1.74	9.94	20.6	0.03	0.25	2.51	2.75	0.23	0.60	0.83	—	5,344	5,344	0.19	0.32	4.19	5,448
2029	1.90	1.66	9.43	19.8	0.03	0.23	2.50	2.72	0.21	0.60	0.81	—	5,248	5,248	0.18	0.31	3.73	5,349
2030	1.83	1.53	9.08	19.0	0.03	0.21	2.50	2.71	0.19	0.60	0.79	—	5,167	5,167	0.17	0.30	3.31	5,265
2031	1.76	1.47	8.69	18.4	0.03	0.19	2.50	2.69	0.18	0.60	0.78	—	5,083	5,083	0.17	0.30	2.91	5,178
2032	1.69	1.42	8.33	17.8	0.03	0.18	2.51	2.68	0.16	0.60	0.76	—	5,015	5,015	0.15	0.29	2.53	5,107
2033	0.47	0.41	2.40	5.16	0.01	0.05	0.75	0.80	0.04	0.18	0.22	—	1,473	1,473	0.05	0.06	0.66	1,493
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.26	0.22	1.94	2.17	< 0.005	0.08	0.04	0.12	0.07	0.01	0.08	—	412	412	0.02	0.01	0.08	415
2026	0.41	0.35	2.03	4.07	0.01	0.06	0.46	0.51	0.05	0.11	0.16	—	908	908	0.04	0.05	0.86	926
2027	0.39	0.33	1.92	3.89	0.01	0.05	0.46	0.51	0.05	0.11	0.16	—	895	895	0.03	0.05	0.77	913
2028	0.38	0.32	1.81	3.77	0.01	0.04	0.46	0.50	0.04	0.11	0.15	—	885	885	0.03	0.05	0.69	902
2029	0.35	0.30	1.72	3.61	0.01	0.04	0.46	0.50	0.04	0.11	0.15	—	869	869	0.03	0.05	0.62	886
2030	0.33	0.28	1.66	3.48	0.01	0.04	0.46	0.50	0.03	0.11	0.14	—	856	856	0.03	0.05	0.55	872
2031	0.32	0.27	1.59	3.35	0.01	0.03	0.46	0.49	0.03	0.11	0.14	—	842	842	0.03	0.05	0.48	857
2032	0.31	0.26	1.52	3.25	0.01	0.03	0.46	0.49	0.03	0.11	0.14	—	830	830	0.03	0.05	0.42	845
2033	0.09	0.07	0.44	0.94	< 0.005	0.01	0.14	0.15	0.01	0.03	0.04	—	244	244	0.01	0.01	0.11	247

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	32.0	57.7	38.2	295	0.70	1.74	59.5	61.2	1.71	15.1	16.8	311	84,932	85,243	34.5	2.45	109	86,944
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	26.7	52.5	41.9	213	0.65	1.72	59.5	61.2	1.70	15.1	16.8	311	79,411	79,722	34.7	2.68	12.1	81,401

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	27.4	53.7	31.6	230	0.60	1.02	58.7	59.7	0.99	14.9	15.9	311	69,399	69,710	34.4	2.55	52.6	71,384
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.00	9.80	5.77	41.9	0.11	0.19	10.7	10.9	0.18	2.72	2.90	51.5	11,490	11,541	5.69	0.42	8.70	11,818

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	26.5	24.4	21.5	249	0.60	0.40	59.5	59.9	0.38	15.1	15.5	—	60,599	60,599	1.90	2.22	99.6	61,409
Area	4.88	33.0	11.7	43.9	0.07	0.94	—	0.94	0.93	—	0.93	0.00	14,527	14,527	0.28	0.03	—	14,542
Energy	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	9,650	9,650	1.09	0.08	—	9,700
Water	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Waste	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Total	32.0	57.7	38.2	295	0.70	1.74	59.5	61.2	1.71	15.1	16.8	311	84,932	85,243	34.5	2.45	109	86,944
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	24.8	22.6	25.5	206	0.54	0.40	59.5	59.9	0.38	15.1	15.5	—	55,183	55,183	2.10	2.46	2.58	55,970
Area	1.33	29.7	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438
Energy	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	9,650	9,650	1.09	0.08	—	9,700
Water	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Waste	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57

Total	26.7	52.5	41.9	213	0.65	1.72	59.5	61.2	1.70	15.1	16.8	311	79,411	79,722	34.7	2.68	12.1	81,401
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	24.8	22.6	23.8	207	0.55	0.40	58.7	59.1	0.38	14.9	15.3	—	56,302	56,302	1.99	2.35	43.0	57,096
Area	2.05	30.8	2.73	20.3	0.02	0.21	—	0.21	0.21	—	0.21	0.00	3,292	3,292	0.06	0.01	—	3,295
Energy	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	9,650	9,650	1.09	0.08	—	9,700
Water	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Waste	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Total	27.4	53.7	31.6	230	0.60	1.02	58.7	59.7	0.99	14.9	15.9	311	69,399	69,710	34.4	2.55	52.6	71,384
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.52	4.12	4.35	37.8	0.10	0.07	10.7	10.8	0.07	2.72	2.79	—	9,321	9,321	0.33	0.39	7.12	9,453
Area	0.37	5.63	0.50	3.71	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	545	545	0.01	< 0.005	—	546
Energy	0.11	0.05	0.92	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,598	1,598	0.18	0.01	—	1,606
Water	—	—	—	—	—	—	—	—	—	—	—	7.91	25.7	33.6	0.82	0.02	—	59.9
Waste	—	—	—	—	—	—	—	—	—	—	—	43.6	0.00	43.6	4.36	0.00	—	153
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Total	5.00	9.80	5.77	41.9	0.11	0.19	10.7	10.9	0.18	2.72	2.90	51.5	11,490	11,541	5.69	0.42	8.70	11,818

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.73	1.65	< 0.005	0.07	—	0.07	0.07	—	0.07	—	290	290	0.01	< 0.005	—	291
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.32	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.0	48.0	< 0.005	< 0.005	—	48.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.33	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	199	199	0.01	0.01	0.77	202
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.92	9.92	< 0.005	< 0.005	0.02	10.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.70	6.50	6.20	0.01	0.27	—	0.27	0.25	—	0.25	—	1,446	1,446	0.06	0.01	—	1,451
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.19	1.13	< 0.005	0.05	—	0.05	0.05	—	0.05	—	239	239	0.01	< 0.005	—	240
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.08	1.52	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	227	227	0.01	0.01	0.88	231
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	45.3	45.3	< 0.005	< 0.005	0.08	46.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.51	7.51	< 0.005	< 0.005	0.01	7.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	108	108	< 0.005	< 0.005	—	108
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.9	17.9	< 0.005	< 0.005	—	17.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.41	1.29	1.35	14.1	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,484	2,484	0.15	0.10	0.28	2,518
Vendor	0.21	0.09	3.88	1.39	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,183	2,183	0.11	0.33	0.14	2,283
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	0.01	< 0.005	0.21	116
Vendor	0.01	< 0.005	0.17	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	98.3	98.3	0.01	0.01	0.11	103
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.0	19.0	< 0.005	< 0.005	0.04	19.3
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.3	16.3	< 0.005	< 0.005	0.02	17.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.77	7.04	9.26	0.02	0.27	—	0.27	0.25	—	0.25	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.48	1.30	0.91	17.3	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,745	2,745	0.13	0.10	9.95	2,788
Vendor	0.19	0.08	3.38	1.25	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,147	2,147	0.11	0.32	4.88	2,251
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.26	1.14	1.18	13.0	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,433	2,433	0.07	0.10	0.26	2,465
Vendor	0.19	0.07	3.63	1.28	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,147	2,147	0.11	0.32	0.13	2,246
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.90	0.83	0.77	9.44	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,784	1,784	0.10	0.07	3.07	1,810
Vendor	0.14	0.05	2.54	0.90	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,534	1,534	0.08	0.23	1.49	1,606
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.14	1.72	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	295	295	0.02	0.01	0.51	300
Vendor	0.03	0.01	0.46	0.16	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	0.01	0.04	0.25	266
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.23	0.81	15.9	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,688	2,688	0.12	0.10	9.04	2,729
Vendor	0.19	0.07	3.15	1.18	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,105	2,105	0.11	0.31	4.27	2,204
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.21	1.10	1.09	12.0	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,383	2,383	0.07	0.10	0.23	2,415

Vendor	0.19	0.07	3.37	1.22	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,105	2,105	0.11	0.31	0.11	2,200
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.87	0.79	0.71	8.69	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,747	1,747	0.04	0.07	2.79	1,772
Vendor	0.13	0.05	2.37	0.85	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,503	1,503	0.08	0.22	1.32	1,573
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.13	1.59	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	289	289	0.01	0.01	0.46	293
Vendor	0.02	0.01	0.43	0.16	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	249	249	0.01	0.04	0.22	260
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	0.71	6.39	9.26	0.02	0.22	—	0.22	0.20	—	0.20	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.17	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.28	1.18	0.72	14.8	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,633	2,633	0.04	0.10	8.17	2,672
Vendor	0.18	0.06	2.91	1.12	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,054	2,054	0.10	0.31	3.78	2,152
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.16	1.05	1.00	11.1	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,335	2,335	0.06	0.10	0.21	2,367
Vendor	0.17	0.06	3.12	1.14	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,054	2,054	0.10	0.31	0.10	2,149
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.76	0.65	8.14	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,716	1,716	0.04	0.07	2.52	1,741
Vendor	0.12	0.04	2.20	0.81	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,471	1,471	0.07	0.22	1.17	1,540
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.49	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	284	284	0.01	0.01	0.42	288

Vendor	0.02	0.01	0.40	0.15	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	244	244	0.01	0.04	0.19	255
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.69	6.13	9.22	0.02	0.20	—	0.20	0.18	—	0.18	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.12	1.68	< 0.005	0.04	—	0.04	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.14	1.12	0.63	13.6	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,581	2,581	0.04	0.09	7.33	2,618
Vendor	0.16	0.06	2.71	1.06	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	1,997	1,997	0.10	0.30	3.31	2,090
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.03	1.00	0.91	10.3	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,290	2,290	0.06	0.10	0.19	2,322
Vendor	0.16	0.06	2.90	1.09	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	1,997	1,997	0.10	0.30	0.09	2,088
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.73	0.72	0.58	7.49	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,679	1,679	0.03	0.07	2.26	1,703
Vendor	0.11	0.04	2.03	0.77	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,426	1,426	0.07	0.21	1.02	1,492
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.13	0.11	1.37	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	278	278	0.01	0.01	0.37	282
Vendor	0.02	0.01	0.37	0.14	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	236	236	0.01	0.03	0.17	247
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.67	5.99	9.20	0.02	0.19	—	0.19	0.17	—	0.17	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.09	1.68	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.08	0.99	0.63	12.6	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,533	2,533	0.04	0.09	6.51	2,568
Vendor	0.14	0.06	2.55	1.01	0.01	0.03	0.55	0.58	0.01	0.15	0.16	—	1,936	1,936	0.08	0.28	2.91	2,024
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.97	0.87	0.82	9.51	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,248	2,248	0.05	0.10	0.17	2,279

Vendor	0.14	0.06	2.73	1.04	0.01	0.03	0.55	0.58	0.01	0.15	0.16	—	1,936	1,936	0.08	0.28	0.08	2,022
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.70	0.63	0.52	6.93	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,648	1,648	0.03	0.07	2.01	1,672
Vendor	0.10	0.04	1.91	0.73	0.01	0.02	0.39	0.41	0.01	0.11	0.12	—	1,383	1,383	0.06	0.20	0.90	1,445
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.09	1.27	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	273	273	0.01	0.01	0.33	277
Vendor	0.02	0.01	0.35	0.13	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	229	229	0.01	0.03	0.15	239
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.66	5.80	9.18	0.02	0.17	—	0.17	0.16	—	0.16	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.06	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.92	0.54	11.7	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,488	2,488	0.04	0.02	5.77	2,499
Vendor	0.14	0.06	2.39	0.95	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,866	1,866	0.08	0.28	2.50	1,954
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.92	0.81	0.73	8.82	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,208	2,208	0.05	0.10	0.15	2,239
Vendor	0.14	0.06	2.56	0.98	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,867	1,867	0.08	0.28	0.07	1,953
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.66	0.59	0.45	6.42	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,619	1,619	0.03	0.07	1.78	1,641
Vendor	0.10	0.04	1.79	0.69	0.01	0.01	0.39	0.40	0.01	0.11	0.12	—	1,333	1,333	0.06	0.20	0.77	1,395
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.08	1.17	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	268	268	0.01	0.01	0.29	272

Vendor	0.02	0.01	0.33	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	221	221	0.01	0.03	0.13	231
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Building Construction (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.64	5.64	9.16	0.02	0.16	—	0.16	0.15	—	0.15	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.03	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.95	0.86	0.45	10.9	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,446	2,446	0.03	0.02	5.06	2,457
Vendor	0.13	0.06	2.24	0.91	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,797	1,797	0.07	0.27	2.13	1,880
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.80	0.77	0.64	8.17	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,172	2,172	0.05	0.10	0.13	2,203
Vendor	0.12	0.04	2.40	0.94	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,798	1,798	0.07	0.27	0.06	1,879
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.56	0.39	6.00	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,596	1,596	0.03	0.07	1.56	1,619
Vendor	0.09	0.04	1.67	0.66	0.01	0.01	0.39	0.40	0.01	0.11	0.12	—	1,287	1,287	0.05	0.19	0.66	1,346
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.09	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	264	264	< 0.005	0.01	0.26	268
Vendor	0.02	0.01	0.31	0.12	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	213	213	0.01	0.03	0.11	223
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Building Construction (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.62	2.70	< 0.005	0.04	—	0.04	0.04	—	0.04	—	507	507	0.02	< 0.005	—	508
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	83.9	83.9	< 0.005	< 0.005	—	84.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.82	0.45	10.2	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,409	2,409	0.03	0.02	4.40	2,419
Vendor	0.11	0.04	2.09	0.86	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,728	1,728	0.07	0.25	1.82	1,807
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.75	0.73	0.56	7.67	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,139	2,139	0.04	0.10	0.11	2,170

Vendor	0.10	0.04	2.24	0.89	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,730	1,730	0.07	0.25	0.05	1,807
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.11	1.64	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	464	464	0.01	< 0.005	0.40	466
Vendor	0.02	0.01	0.46	0.19	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	—	365	365	0.01	0.05	0.17	382
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	76.8	76.8	< 0.005	< 0.005	0.07	77.1
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	60.5	60.5	< 0.005	0.01	0.03	63.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.63	2.19	< 0.005	0.08	—	0.08	0.07	—	0.07	—	331	331	0.01	< 0.005	—	332
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.8	54.8	< 0.005	< 0.005	—	55.0
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.06	1.14	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	171	171	0.01	0.01	0.66	173
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	0.86	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	151	151	0.01	0.01	0.02	153
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.0	34.0	< 0.005	< 0.005	0.06	34.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.26	0.27	2.82	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	497	497	0.03	0.02	0.06	504
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.98	8.98	< 0.005	< 0.005	0.02	9.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.49	1.49	< 0.005	< 0.005	< 0.005	1.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.61	0.81	< 0.005	0.02	—	0.02	0.02	—	0.02	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.30	0.26	0.18	3.46	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	549	549	0.03	0.02	1.99	558
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.24	2.59	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	487	487	0.01	0.02	0.05	493
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.17	0.15	1.89	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	357	357	0.02	0.01	0.61	362
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.34	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	59.1	59.1	< 0.005	< 0.005	0.10	59.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.29. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.08	0.59	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.25	0.16	3.18	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	538	538	0.02	0.02	1.81	546
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.22	2.39	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	477	477	0.01	0.02	0.05	483
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.14	1.74	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	349	349	0.01	0.01	0.56	354
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	57.8	57.8	< 0.005	< 0.005	0.09	58.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.31. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.58	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.6	95.6	< 0.005	< 0.005	—	96.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.24	0.14	2.95	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	527	527	0.01	0.02	1.63	534
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	0.20	2.22	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	467	467	0.01	0.02	0.04	473
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.13	1.63	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	343	343	0.01	0.01	0.50	348
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	56.8	56.8	< 0.005	< 0.005	0.08	57.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.33. Architectural Coating (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.57	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.22	0.13	2.72	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	516	516	0.01	0.02	1.47	524
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.20	0.18	2.05	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	458	458	0.01	0.02	0.04	464

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.50	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	336	336	0.01	0.01	0.45	341
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.27	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	55.6	55.6	< 0.005	< 0.005	0.07	56.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.35. Architectural Coating (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.56	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.13	2.53	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	507	507	0.01	0.02	1.30	514
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.16	1.90	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	450	450	0.01	0.02	0.03	456
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.39	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	330	330	0.01	0.01	0.40	334
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	54.6	54.6	< 0.005	< 0.005	0.07	55.4

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.37. Architectural Coating (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.34	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	498	498	0.01	< 0.005	1.15	500
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.15	1.76	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	442	442	0.01	0.02	0.03	448
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.09	1.28	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.36	328
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	53.6	53.6	< 0.005	< 0.005	0.06	54.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.39. Architectural Coating (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.6	95.6	< 0.005	< 0.005	—	95.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.09	2.18	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	489	489	0.01	< 0.005	1.01	491
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.13	1.63	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	434	434	0.01	0.02	0.03	441

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.08	1.20	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	319	319	0.01	0.01	0.31	324
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.22	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	52.9	52.9	< 0.005	< 0.005	0.05	53.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.41. Architectural Coating (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.9	31.9	< 0.005	< 0.005	—	32.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.28	5.28	< 0.005	< 0.005	—	5.30
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.09	2.04	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	482	482	0.01	< 0.005	0.88	484
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.11	1.53	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	428	428	0.01	0.02	0.02	434
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	105	105	< 0.005	< 0.005	0.09	105
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	17.4	17.4	< 0.005	< 0.005	0.02	17.4

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	26.5	24.4	21.5	249	0.60	0.40	59.5	59.9	0.38	15.1	15.5	—	60,599	60,599	1.90	2.22	99.6	61,409
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	26.5	24.4	21.5	249	0.60	0.40	59.5	59.9	0.38	15.1	15.5	—	60,599	60,599	1.90	2.22	99.6	61,409
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	24.8	22.6	25.5	206	0.54	0.40	59.5	59.9	0.38	15.1	15.5	—	55,183	55,183	2.10	2.46	2.58	55,970
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	24.8	22.6	25.5	206	0.54	0.40	59.5	59.9	0.38	15.1	15.5	—	55,183	55,183	2.10	2.46	2.58	55,970
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.52	4.12	4.35	37.8	0.10	0.07	10.7	10.8	0.07	2.72	2.79	—	9,321	9,321	0.33	0.39	7.12	9,453
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	4.52	4.12	4.35	37.8	0.10	0.07	10.7	10.8	0.07	2.72	2.79	—	9,321	9,321	0.33	0.39	7.12	9,453

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	540	540	0.09	0.01	—	546
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	540	540	0.09	0.01	—	546

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.11	0.05	0.92	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,057	1,057	0.09	< 0.005	—	1,060
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.11	0.05	0.92	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,057	1,057	0.09	< 0.005	—	1,060

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.33	0.66	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438
Consumer Products	—	29.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.55	3.36	0.36	39.1	< 0.005	0.02	—	0.02	0.01	—	0.01	—	104	104	< 0.005	< 0.005	—	104
Total	4.88	33.0	11.7	43.9	0.07	0.94	—	0.94	0.93	—	0.93	0.00	14,527	14,527	0.28	0.03	—	14,542
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.33	0.66	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438
Consumer Products	—	29.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.33	29.7	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.05	0.03	0.47	0.20	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	536	536	0.01	< 0.005	—	537
Consumer Products	—	5.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.32	0.30	0.03	3.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.48	8.48	< 0.005	< 0.005	—	8.51
Total	0.37	5.63	0.50	3.71	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	545	545	0.01	< 0.005	—	546

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.8	147	195	4.92	0.12	—	353
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	8.18	8.18	< 0.005	< 0.005	—	8.26
Total	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.8	147	195	4.92	0.12	—	353
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	8.18	8.18	< 0.005	< 0.005	—	8.26
Total	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.91	24.3	32.3	0.81	0.02	—	58.5
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	1.35	1.35	< 0.005	< 0.005	—	1.37
Total	—	—	—	—	—	—	—	—	—	—	—	7.91	25.7	33.6	0.82	0.02	—	59.9

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.2	0.00	—	919
City Park	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	0.08	0.00	—	2.89
Total	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.2	0.00	—	919
City Park	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	0.08	0.00	—	2.89
Total	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.34	0.00	—	152
City Park	—	—	—	—	—	—	—	—	—	—	—	0.14	0.00	0.14	0.01	0.00	—	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	43.6	0.00	43.6	4.36	0.00	—	153

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	4/1/2025	4/28/2025	5.00	20.0	—
Grading	Grading	4/29/2025	8/18/2025	5.00	80.0	—

Building Construction	Building Construction	12/9/2025	4/18/2033	5.00	1,920	—
Paving	Paving	8/19/2025	12/8/2025	5.00	80.0	—
Architectural Coating	Architectural Coating	12/23/2025	5/2/2033	5.00	1,920	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	14.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	14.3	LDA,LDT1,LDT2
Grading	Vendor	—	8.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	247	14.3	LDA,LDT1,LDT2
Building Construction	Vendor	73.2	8.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	14.3	LDA,LDT1,LDT2
Paving	Vendor	—	8.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	49.3	14.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.80	HHDT,MHDT

Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Paving	0.00	0.00	0.00	0.00	7.55

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	7.55	0%
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005
2030	0.00	204	0.03	< 0.005
2031	0.00	204	0.03	< 0.005
2032	0.00	204	0.03	< 0.005
2033	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	5,925	5,925	5,925	2,162,716	84,059	84,059	84,059	30,681,535
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	685

Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	69

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
—	—	—	—	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	5,840,111	204	0.0330	0.0040	19,926,667
City Park	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	24,928,743	114,761,798

City Park	0.00	9,074,060

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	487	—
City Park	1.53	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	Lot acreage adjusted based on applicant provided information City park assumed to be all landscaped
Construction: Construction Phases	Demolition not required Phase timing adjusted based on applicant provided air quality questionnaire Based on typical construction practices, architectural coating assumed to start two weeks after the start of building construction and last for the same number of days
Construction: Architectural Coatings	Default
Operations: Hearths	Wood stoves not proposed Natural gas only fireplaces
Construction: Dust From Material Movement	No soil movement
Operations: Vehicle Data	Trip rates and VMT adjusted consistent with TIS prepared by TJKM.

Heritage Oaks Estates East Project v3 Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Heritage Oaks Estates East Project v3
Construction Start Date	4/1/2025
Operational Year	2034
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	21.0
Location	39.003174550138, -121.41987676256036
County	Yuba
City	Wheatland
Air District	Feather River AQMD
Air Basin	Sacramento Valley
TAZ	344
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Single Family Housing	685	Dwelling Unit	123	1,335,750	8,023,307	—	1,980	—
City Park	17.8	Acre	17.8	0.00	775,368	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.05	3.41	31.7	36.1	0.06	1.37	3.54	3.97	1.26	0.85	1.30	—	7,972	7,972	0.37	0.46	16.8	8,136
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.40	2.90	16.8	32.5	0.04	0.49	3.54	4.03	0.45	0.85	1.30	—	7,696	7,696	0.40	0.47	0.48	7,845
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.24	1.90	11.1	22.3	0.03	0.44	2.51	2.81	0.41	0.60	0.88	—	5,482	5,482	0.27	0.33	5.18	5,592
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.35	2.03	4.07	0.01	0.08	0.46	0.51	0.07	0.11	0.16	—	908	908	0.04	0.05	0.86	926

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.05	3.41	31.7	31.5	0.06	1.37	0.20	1.54	1.26	0.05	1.30	—	6,826	6,826	0.28	0.06	0.88	6,852
2026	3.39	2.82	15.2	36.1	0.04	0.43	3.54	3.97	0.40	0.85	1.25	—	7,972	7,972	0.37	0.46	16.8	8,136
2027	3.16	2.70	14.3	34.3	0.04	0.38	3.54	3.93	0.36	0.85	1.21	—	7,860	7,860	0.36	0.45	15.1	8,019
2028	3.02	2.57	13.5	32.9	0.04	0.34	3.54	3.89	0.32	0.85	1.17	—	7,744	7,744	0.25	0.45	13.6	7,898
2029	2.80	2.47	12.8	31.4	0.04	0.32	3.54	3.86	0.29	0.85	1.14	—	7,624	7,624	0.24	0.43	12.1	7,770
2030	2.68	2.28	12.5	30.2	0.04	0.30	3.54	3.84	0.26	0.85	1.11	—	7,505	7,505	0.23	0.41	10.7	7,645
2031	2.57	2.18	11.9	29.0	0.04	0.27	3.54	3.81	0.25	0.85	1.10	—	7,381	7,381	0.23	0.32	9.42	7,492
2032	2.46	2.08	11.4	27.9	0.04	0.25	3.54	3.79	0.23	0.85	1.08	—	7,263	7,263	0.21	0.31	8.20	7,367
2033	2.27	1.99	11.1	27.0	0.04	0.22	3.54	3.77	0.21	0.85	1.06	—	7,149	7,149	0.21	0.29	7.10	7,249
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.40	2.90	16.8	32.5	0.04	0.49	3.54	4.03	0.45	0.85	1.30	—	7,696	7,696	0.40	0.47	0.48	7,845
2026	3.13	2.64	15.8	30.9	0.04	0.43	3.54	3.98	0.40	0.85	1.25	—	7,597	7,597	0.30	0.46	0.44	7,743
2027	3.00	2.53	14.9	29.6	0.04	0.39	3.54	3.93	0.36	0.85	1.21	—	7,495	7,495	0.29	0.45	0.39	7,637
2028	2.88	2.42	14.1	28.5	0.04	0.34	3.54	3.89	0.32	0.85	1.17	—	7,387	7,387	0.27	0.45	0.35	7,528
2029	2.66	2.32	13.4	27.4	0.04	0.32	3.54	3.86	0.29	0.85	1.14	—	7,276	7,276	0.27	0.44	0.31	7,413
2030	2.55	2.14	12.9	26.4	0.04	0.30	3.54	3.84	0.26	0.85	1.11	—	7,164	7,164	0.25	0.42	0.28	7,296
2031	2.45	2.04	12.3	25.5	0.04	0.27	3.54	3.81	0.25	0.85	1.10	—	7,047	7,047	0.24	0.42	0.24	7,179
2032	2.26	1.96	11.8	24.6	0.04	0.25	3.54	3.79	0.23	0.85	1.08	—	6,934	6,934	0.23	0.41	0.21	7,062
2033	2.17	1.88	11.3	24.0	0.04	0.22	3.54	3.77	0.21	0.85	1.06	—	6,827	6,827	0.22	0.39	0.18	6,949
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.45	1.22	10.6	11.9	0.02	0.44	0.23	0.67	0.41	0.05	0.46	—	2,489	2,489	0.11	0.04	0.50	2,505
2026	2.24	1.90	11.1	22.3	0.03	0.31	2.50	2.81	0.28	0.60	0.88	—	5,482	5,482	0.27	0.33	5.18	5,592

2027	2.15	1.82	10.5	21.3	0.03	0.27	2.50	2.77	0.25	0.60	0.85	—	5,407	5,407	0.20	0.32	4.66	5,513
2028	2.07	1.74	9.94	20.6	0.03	0.25	2.51	2.75	0.23	0.60	0.83	—	5,344	5,344	0.19	0.32	4.19	5,448
2029	1.90	1.66	9.43	19.8	0.03	0.23	2.50	2.72	0.21	0.60	0.81	—	5,248	5,248	0.18	0.31	3.73	5,349
2030	1.83	1.53	9.08	19.0	0.03	0.21	2.50	2.71	0.19	0.60	0.79	—	5,167	5,167	0.17	0.30	3.31	5,265
2031	1.76	1.47	8.69	18.4	0.03	0.19	2.50	2.69	0.18	0.60	0.78	—	5,083	5,083	0.17	0.30	2.91	5,178
2032	1.69	1.42	8.33	17.8	0.03	0.18	2.51	2.68	0.16	0.60	0.76	—	5,015	5,015	0.15	0.29	2.53	5,107
2033	0.47	0.41	2.40	5.16	0.01	0.05	0.75	0.80	0.04	0.18	0.22	—	1,473	1,473	0.05	0.06	0.66	1,493
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.26	0.22	1.94	2.17	< 0.005	0.08	0.04	0.12	0.07	0.01	0.08	—	412	412	0.02	0.01	0.08	415
2026	0.41	0.35	2.03	4.07	0.01	0.06	0.46	0.51	0.05	0.11	0.16	—	908	908	0.04	0.05	0.86	926
2027	0.39	0.33	1.92	3.89	0.01	0.05	0.46	0.51	0.05	0.11	0.16	—	895	895	0.03	0.05	0.77	913
2028	0.38	0.32	1.81	3.77	0.01	0.04	0.46	0.50	0.04	0.11	0.15	—	885	885	0.03	0.05	0.69	902
2029	0.35	0.30	1.72	3.61	0.01	0.04	0.46	0.50	0.04	0.11	0.15	—	869	869	0.03	0.05	0.62	886
2030	0.33	0.28	1.66	3.48	0.01	0.04	0.46	0.50	0.03	0.11	0.14	—	856	856	0.03	0.05	0.55	872
2031	0.32	0.27	1.59	3.35	0.01	0.03	0.46	0.49	0.03	0.11	0.14	—	842	842	0.03	0.05	0.48	857
2032	0.31	0.26	1.52	3.25	0.01	0.03	0.46	0.49	0.03	0.11	0.14	—	830	830	0.03	0.05	0.42	845
2033	0.09	0.07	0.44	0.94	< 0.005	0.01	0.14	0.15	0.01	0.03	0.04	—	244	244	0.01	0.01	0.11	247

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	60.0	56.9	36.4	272	0.64	1.70	53.4	55.1	1.68	13.6	15.2	311	78,843	79,154	34.4	2.26	99.0	80,785
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	54.8	51.8	39.7	196	0.59	1.69	53.4	55.1	1.66	13.6	15.2	311	73,877	74,188	34.6	2.47	11.9	75,801

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	55.5	52.9	29.6	212	0.55	0.98	52.7	53.7	0.96	13.4	14.3	311	63,749	64,060	34.3	2.35	48.2	65,666
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.1	9.66	5.40	38.7	0.10	0.18	9.61	9.79	0.17	2.44	2.62	51.5	10,554	10,606	5.67	0.39	7.98	10,872

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	25.6	23.6	19.6	226	0.54	0.36	53.4	53.8	0.34	13.6	13.9	—	54,510	54,510	1.77	2.03	89.4	55,249
Area	33.9	33.0	11.7	43.9	0.07	0.94	—	0.94	0.93	—	0.93	0.00	14,527	14,527	0.28	0.03	—	14,542
Energy	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	9,650	9,650	1.09	0.08	—	9,700
Water	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Waste	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Total	60.0	56.9	36.4	272	0.64	1.70	53.4	55.1	1.68	13.6	15.2	311	78,843	79,154	34.4	2.26	99.0	80,785
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.8	21.8	23.3	189	0.49	0.36	53.4	53.8	0.34	13.6	13.9	—	49,649	49,649	1.97	2.25	2.32	50,370
Area	30.4	29.7	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438
Energy	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	9,650	9,650	1.09	0.08	—	9,700
Water	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Waste	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57

Total	54.8	51.8	39.7	196	0.59	1.69	53.4	55.1	1.66	13.6	15.2	311	73,877	74,188	34.6	2.47	11.9	75,801
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.8	21.8	21.8	189	0.50	0.36	52.7	53.0	0.34	13.4	13.7	—	50,653	50,653	1.86	2.15	38.6	51,378
Area	31.1	30.8	2.73	20.3	0.02	0.21	—	0.21	0.21	—	0.21	0.00	3,292	3,292	0.06	0.01	—	3,295
Energy	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	9,650	9,650	1.09	0.08	—	9,700
Water	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Waste	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Total	55.5	52.9	29.6	212	0.55	0.98	52.7	53.7	0.96	13.4	14.3	311	63,749	64,060	34.3	2.35	48.2	65,666
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	4.34	3.98	3.98	34.6	0.09	0.07	9.61	9.68	0.06	2.44	2.50	—	8,386	8,386	0.31	0.36	6.39	8,506
Area	5.67	5.63	0.50	3.71	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	545	545	0.01	< 0.005	—	546
Energy	0.11	0.05	0.92	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,598	1,598	0.18	0.01	—	1,606
Water	—	—	—	—	—	—	—	—	—	—	—	7.91	25.7	33.6	0.82	0.02	—	59.9
Waste	—	—	—	—	—	—	—	—	—	—	—	43.6	0.00	43.6	4.36	0.00	—	153
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Total	10.1	9.66	5.40	38.7	0.10	0.18	9.61	9.79	0.17	2.44	2.62	51.5	10,554	10,606	5.67	0.39	7.98	10,872

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.73	1.65	< 0.005	0.07	—	0.07	0.07	—	0.07	—	290	290	0.01	< 0.005	—	291
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.32	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.0	48.0	< 0.005	< 0.005	—	48.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.33	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	199	199	0.01	0.01	0.77	202
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.92	9.92	< 0.005	< 0.005	0.02	10.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.70	6.50	6.20	0.01	0.27	—	0.27	0.25	—	0.25	—	1,446	1,446	0.06	0.01	—	1,451
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.19	1.13	< 0.005	0.05	—	0.05	0.05	—	0.05	—	239	239	0.01	< 0.005	—	240
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.08	1.52	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	227	227	0.01	0.01	0.88	231
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	45.3	45.3	< 0.005	< 0.005	0.08	46.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.51	7.51	< 0.005	< 0.005	0.01	7.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	108	108	< 0.005	< 0.005	—	108
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.9	17.9	< 0.005	< 0.005	—	17.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.41	1.29	1.35	14.1	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,484	2,484	0.15	0.10	0.28	2,518
Vendor	0.21	0.09	3.88	1.39	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,183	2,183	0.11	0.33	0.14	2,283
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.05	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	0.01	< 0.005	0.21	116
Vendor	0.01	< 0.005	0.17	0.06	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	98.3	98.3	0.01	0.01	0.11	103
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.0	19.0	< 0.005	< 0.005	0.04	19.3
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.3	16.3	< 0.005	< 0.005	0.02	17.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.77	7.04	9.26	0.02	0.27	—	0.27	0.25	—	0.25	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.48	1.30	0.91	17.3	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,745	2,745	0.13	0.10	9.95	2,788
Vendor	0.19	0.08	3.38	1.25	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,147	2,147	0.11	0.32	4.88	2,251
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.26	1.14	1.18	13.0	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,433	2,433	0.07	0.10	0.26	2,465
Vendor	0.19	0.07	3.63	1.28	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,147	2,147	0.11	0.32	0.13	2,246
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.90	0.83	0.77	9.44	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,784	1,784	0.10	0.07	3.07	1,810
Vendor	0.14	0.05	2.54	0.90	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,534	1,534	0.08	0.23	1.49	1,606
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.14	1.72	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	295	295	0.02	0.01	0.51	300
Vendor	0.03	0.01	0.46	0.16	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	254	254	0.01	0.04	0.25	266
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.23	0.81	15.9	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,688	2,688	0.12	0.10	9.04	2,729
Vendor	0.19	0.07	3.15	1.18	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,105	2,105	0.11	0.31	4.27	2,204
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.21	1.10	1.09	12.0	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,383	2,383	0.07	0.10	0.23	2,415

Vendor	0.19	0.07	3.37	1.22	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,105	2,105	0.11	0.31	0.11	2,200
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.87	0.79	0.71	8.69	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,747	1,747	0.04	0.07	2.79	1,772
Vendor	0.13	0.05	2.37	0.85	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,503	1,503	0.08	0.22	1.32	1,573
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.13	1.59	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	289	289	0.01	0.01	0.46	293
Vendor	0.02	0.01	0.43	0.16	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	249	249	0.01	0.04	0.22	260
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	0.71	6.39	9.26	0.02	0.22	—	0.22	0.20	—	0.20	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.17	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.28	1.18	0.72	14.8	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,633	2,633	0.04	0.10	8.17	2,672
Vendor	0.18	0.06	2.91	1.12	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,054	2,054	0.10	0.31	3.78	2,152
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.16	1.05	1.00	11.1	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,335	2,335	0.06	0.10	0.21	2,367
Vendor	0.17	0.06	3.12	1.14	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	2,054	2,054	0.10	0.31	0.10	2,149
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.76	0.65	8.14	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,716	1,716	0.04	0.07	2.52	1,741
Vendor	0.12	0.04	2.20	0.81	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,471	1,471	0.07	0.22	1.17	1,540
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.49	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	284	284	0.01	0.01	0.42	288

Vendor	0.02	0.01	0.40	0.15	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	244	244	0.01	0.04	0.19	255
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.69	6.13	9.22	0.02	0.20	—	0.20	0.18	—	0.18	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.12	1.68	< 0.005	0.04	—	0.04	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.14	1.12	0.63	13.6	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,581	2,581	0.04	0.09	7.33	2,618
Vendor	0.16	0.06	2.71	1.06	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	1,997	1,997	0.10	0.30	3.31	2,090
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.03	1.00	0.91	10.3	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,290	2,290	0.06	0.10	0.19	2,322
Vendor	0.16	0.06	2.90	1.09	0.01	0.03	0.55	0.58	0.03	0.15	0.18	—	1,997	1,997	0.10	0.30	0.09	2,088
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.73	0.72	0.58	7.49	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,679	1,679	0.03	0.07	2.26	1,703
Vendor	0.11	0.04	2.03	0.77	0.01	0.02	0.39	0.41	0.02	0.11	0.13	—	1,426	1,426	0.07	0.21	1.02	1,492
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.13	0.11	1.37	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	278	278	0.01	0.01	0.37	282
Vendor	0.02	0.01	0.37	0.14	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	236	236	0.01	0.03	0.17	247
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.67	5.99	9.20	0.02	0.19	—	0.19	0.17	—	0.17	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.09	1.68	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.08	0.99	0.63	12.6	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,533	2,533	0.04	0.09	6.51	2,568
Vendor	0.14	0.06	2.55	1.01	0.01	0.03	0.55	0.58	0.01	0.15	0.16	—	1,936	1,936	0.08	0.28	2.91	2,024
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.97	0.87	0.82	9.51	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,248	2,248	0.05	0.10	0.17	2,279

Vendor	0.14	0.06	2.73	1.04	0.01	0.03	0.55	0.58	0.01	0.15	0.16	—	1,936	1,936	0.08	0.28	0.08	2,022
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.70	0.63	0.52	6.93	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,648	1,648	0.03	0.07	2.01	1,672
Vendor	0.10	0.04	1.91	0.73	0.01	0.02	0.39	0.41	0.01	0.11	0.12	—	1,383	1,383	0.06	0.20	0.90	1,445
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.09	1.27	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	273	273	0.01	0.01	0.33	277
Vendor	0.02	0.01	0.35	0.13	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	229	229	0.01	0.03	0.15	239
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.66	5.80	9.18	0.02	0.17	—	0.17	0.16	—	0.16	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.06	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.92	0.54	11.7	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,488	2,488	0.04	0.02	5.77	2,499
Vendor	0.14	0.06	2.39	0.95	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,866	1,866	0.08	0.28	2.50	1,954
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.92	0.81	0.73	8.82	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,208	2,208	0.05	0.10	0.15	2,239
Vendor	0.14	0.06	2.56	0.98	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,867	1,867	0.08	0.28	0.07	1,953
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.66	0.59	0.45	6.42	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,619	1,619	0.03	0.07	1.78	1,641
Vendor	0.10	0.04	1.79	0.69	0.01	0.01	0.39	0.40	0.01	0.11	0.12	—	1,333	1,333	0.06	0.20	0.77	1,395
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.08	1.17	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	268	268	0.01	0.01	0.29	272

Vendor	0.02	0.01	0.33	0.13	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	221	221	0.01	0.03	0.13	231
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Building Construction (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.64	5.64	9.16	0.02	0.16	—	0.16	0.15	—	0.15	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.03	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.95	0.86	0.45	10.9	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,446	2,446	0.03	0.02	5.06	2,457
Vendor	0.13	0.06	2.24	0.91	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,797	1,797	0.07	0.27	2.13	1,880
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.80	0.77	0.64	8.17	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,172	2,172	0.05	0.10	0.13	2,203
Vendor	0.12	0.04	2.40	0.94	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,798	1,798	0.07	0.27	0.06	1,879
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.56	0.39	6.00	0.00	0.00	1.76	1.76	0.00	0.41	0.41	—	1,596	1,596	0.03	0.07	1.56	1,619
Vendor	0.09	0.04	1.67	0.66	0.01	0.01	0.39	0.40	0.01	0.11	0.12	—	1,287	1,287	0.05	0.19	0.66	1,346
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.09	0.00	0.00	0.32	0.32	0.00	0.08	0.08	—	264	264	< 0.005	0.01	0.26	268
Vendor	0.02	0.01	0.31	0.12	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	213	213	0.01	0.03	0.11	223
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Building Construction (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.62	2.70	< 0.005	0.04	—	0.04	0.04	—	0.04	—	507	507	0.02	< 0.005	—	508
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	83.9	83.9	< 0.005	< 0.005	—	84.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.82	0.45	10.2	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,409	2,409	0.03	0.02	4.40	2,419
Vendor	0.11	0.04	2.09	0.86	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,728	1,728	0.07	0.25	1.82	1,807
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.75	0.73	0.56	7.67	0.00	0.00	2.49	2.49	0.00	0.58	0.58	—	2,139	2,139	0.04	0.10	0.11	2,170

Vendor	0.10	0.04	2.24	0.89	0.01	0.01	0.55	0.57	0.01	0.15	0.16	—	1,730	1,730	0.07	0.25	0.05	1,807
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.11	1.64	0.00	0.00	0.52	0.52	0.00	0.12	0.12	—	464	464	0.01	< 0.005	0.40	466
Vendor	0.02	0.01	0.46	0.19	< 0.005	< 0.005	0.12	0.12	< 0.005	0.03	0.03	—	365	365	0.01	0.05	0.17	382
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	76.8	76.8	< 0.005	< 0.005	0.07	77.1
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	60.5	60.5	< 0.005	0.01	0.03	63.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.63	2.19	< 0.005	0.08	—	0.08	0.07	—	0.07	—	331	331	0.01	< 0.005	—	332
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.8	54.8	< 0.005	< 0.005	—	55.0
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.06	1.14	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	171	171	0.01	0.01	0.66	173
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	0.86	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	151	151	0.01	0.01	0.02	153
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.0	34.0	< 0.005	< 0.005	0.06	34.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.26	0.27	2.82	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	497	497	0.03	0.02	0.06	504
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.98	8.98	< 0.005	< 0.005	0.02	9.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.49	1.49	< 0.005	< 0.005	< 0.005	1.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.61	0.81	< 0.005	0.02	—	0.02	0.02	—	0.02	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.30	0.26	0.18	3.46	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	549	549	0.03	0.02	1.99	558
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.24	2.59	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	487	487	0.01	0.02	0.05	493
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.17	0.15	1.89	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	357	357	0.02	0.01	0.61	362
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.34	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	59.1	59.1	< 0.005	< 0.005	0.10	59.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.29. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.59	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.25	0.16	3.18	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	538	538	0.02	0.02	1.81	546
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.22	2.39	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	477	477	0.01	0.02	0.05	483
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.14	1.74	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	349	349	0.01	0.01	0.56	354
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.32	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	57.8	57.8	< 0.005	< 0.005	0.09	58.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.31. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.58	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.6	95.6	< 0.005	< 0.005	—	96.0
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.24	0.14	2.95	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	527	527	0.01	0.02	1.63	534
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	0.20	2.22	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	467	467	0.01	0.02	0.04	473
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.13	1.63	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	343	343	0.01	0.01	0.50	348
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	56.8	56.8	< 0.005	< 0.005	0.08	57.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.33. Architectural Coating (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.57	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.22	0.13	2.72	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	516	516	0.01	0.02	1.47	524
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.20	0.18	2.05	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	458	458	0.01	0.02	0.04	464
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.50	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	336	336	0.01	0.01	0.45	341
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.27	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	55.6	55.6	< 0.005	< 0.005	0.07	56.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.35. Architectural Coating (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.56	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.13	2.53	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	507	507	0.01	0.02	1.30	514
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.16	1.90	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	450	450	0.01	0.02	0.03	456
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.39	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	330	330	0.01	0.01	0.40	334
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	54.6	54.6	< 0.005	< 0.005	0.07	55.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.37. Architectural Coating (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.34	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	498	498	0.01	< 0.005	1.15	500
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.15	1.76	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	442	442	0.01	0.02	0.03	448
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.09	1.28	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	324	324	0.01	0.01	0.36	328
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	53.6	53.6	< 0.005	< 0.005	0.06	54.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.39. Architectural Coating (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.6	95.6	< 0.005	< 0.005	—	95.9
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9

Architect Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.09	2.18	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	489	489	0.01	< 0.005	1.01	491
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.13	1.63	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	434	434	0.01	0.02	0.03	441
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.11	0.08	1.20	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	319	319	0.01	0.01	0.31	324
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.22	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	52.9	52.9	< 0.005	< 0.005	0.05	53.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.41. Architectural Coating (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.9	31.9	< 0.005	< 0.005	—	32.0
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.28	5.28	< 0.005	< 0.005	—	5.30

Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.09	2.04	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	482	482	0.01	< 0.005	0.88	484
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.11	1.53	0.00	0.00	0.50	0.50	0.00	0.12	0.12	—	428	428	0.01	0.02	0.02	434
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.37	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	105	105	< 0.005	< 0.005	0.09	105
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	17.4	17.4	< 0.005	< 0.005	0.02	17.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	25.6	23.6	19.6	226	0.54	0.36	53.4	53.8	0.34	13.6	13.9	—	54,510	54,510	1.77	2.03	89.4	55,249
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	25.6	23.6	19.6	226	0.54	0.36	53.4	53.8	0.34	13.6	13.9	—	54,510	54,510	1.77	2.03	89.4	55,249
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	23.8	21.8	23.3	189	0.49	0.36	53.4	53.8	0.34	13.6	13.9	—	49,649	49,649	1.97	2.25	2.32	50,370
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	23.8	21.8	23.3	189	0.49	0.36	53.4	53.8	0.34	13.6	13.9	—	49,649	49,649	1.97	2.25	2.32	50,370
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	4.34	3.98	3.98	34.6	0.09	0.07	9.61	9.68	0.06	2.44	2.50	—	8,386	8,386	0.31	0.36	6.39	8,506
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.34	3.98	3.98	34.6	0.09	0.07	9.61	9.68	0.06	2.44	2.50	—	8,386	8,386	0.31	0.36	6.39	8,506

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	3,264	3,264	0.53	0.06	—	3,296
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	540	540	0.09	0.01	—	546
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	540	540	0.09	0.01	—	546

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.59	0.29	5.03	2.14	0.03	0.41	—	0.41	0.41	—	0.41	—	6,386	6,386	0.57	0.01	—	6,404
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.11	0.05	0.92	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,057	1,057	0.09	< 0.005	—	1,060
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.11	0.05	0.92	0.39	0.01	0.07	—	0.07	0.07	—	0.07	—	1,057	1,057	0.09	< 0.005	—	1,060

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.33	0.66	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438

Consum Products	29.0	29.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.55	3.36	0.36	39.1	< 0.005	0.02	—	0.02	0.01	—	0.01	—	104	104	< 0.005	< 0.005	—	104
Total	33.9	33.0	11.7	43.9	0.07	0.94	—	0.94	0.93	—	0.93	0.00	14,527	14,527	0.28	0.03	—	14,542
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.33	0.66	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438
Consumer Products	29.0	29.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	30.4	29.7	11.4	4.84	0.07	0.92	—	0.92	0.92	—	0.92	0.00	14,423	14,423	0.27	0.03	—	14,438
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.05	0.03	0.47	0.20	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	536	536	0.01	< 0.005	—	537
Consumer Products	5.30	5.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.32	0.30	0.03	3.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.48	8.48	< 0.005	< 0.005	—	8.51
Total	5.67	5.63	0.50	3.71	< 0.005	0.04	—	0.04	0.04	—	0.04	0.00	545	545	0.01	< 0.005	—	546

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.8	147	195	4.92	0.12	—	353
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	8.18	8.18	< 0.005	< 0.005	—	8.26
Total	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.8	147	195	4.92	0.12	—	353
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	8.18	8.18	< 0.005	< 0.005	—	8.26
Total	—	—	—	—	—	—	—	—	—	—	—	47.8	155	203	4.92	0.12	—	362
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.91	24.3	32.3	0.81	0.02	—	58.5
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	1.35	1.35	< 0.005	< 0.005	—	1.37
Total	—	—	—	—	—	—	—	—	—	—	—	7.91	25.7	33.6	0.82	0.02	—	59.9

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.2	0.00	—	919
City Park	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	0.08	0.00	—	2.89
Total	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.2	0.00	—	919
City Park	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	0.08	0.00	—	2.89
Total	—	—	—	—	—	—	—	—	—	—	—	263	0.00	263	26.3	0.00	—	921
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.34	0.00	—	152
City Park	—	—	—	—	—	—	—	—	—	—	—	0.14	0.00	0.14	0.01	0.00	—	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	43.6	0.00	43.6	4.36	0.00	—	153

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.57	9.57
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description

Site Preparation	Site Preparation	4/1/2025	4/28/2025	5.00	20.0	—
Grading	Grading	4/29/2025	8/18/2025	5.00	80.0	—
Building Construction	Building Construction	12/9/2025	4/18/2033	5.00	1,920	—
Paving	Paving	8/19/2025	12/8/2025	5.00	80.0	—
Architectural Coating	Architectural Coating	12/23/2025	5/2/2033	5.00	1,920	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	14.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	14.3	LDA,LDT1,LDT2
Grading	Vendor	—	8.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	247	14.3	LDA,LDT1,LDT2
Building Construction	Vendor	73.2	8.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	14.3	LDA,LDT1,LDT2
Paving	Vendor	—	8.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	49.3	14.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	2,704,894	901,631	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Paving	0.00	0.00	0.00	0.00	7.55

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	7.55	0%
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005
2030	0.00	204	0.03	< 0.005
2031	0.00	204	0.03	< 0.005
2032	0.00	204	0.03	< 0.005
2033	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	5,925	5,925	5,925	2,162,716	75,485	75,485	75,485	27,552,018
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)

Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	685
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	69

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
2704893.75	901,631	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	5,840,111	204	0.0330	0.0040	19,926,667
City Park	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	24,928,743	114,761,798
City Park	0.00	9,074,060

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	487	—
City Park	1.53	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	Lot acreage adjusted based on applicant provided information City park assumed to be all landscaped
Construction: Construction Phases	Demolition not required Phase timing adjusted based on applicant provided air quality questionnaire Based on typical construction practices, architectural coating assumed to start two weeks after the start of building construction and last for the same number of days
Construction: Architectural Coatings	No VOC paint based on implementation of Mitigation Measure 4.1-2(a).
Operations: Hearths	Wood stoves not proposed Natural gas only fireplaces
Construction: Dust From Material Movement	No soil movement
Operations: Vehicle Data	Trip rates and VMT adjusted consistent with TIS prepared by TJKM. VMT reduction of 10.2 percent based on implementation of Mitigation Measure 4.3-5.
Operations: Architectural Coatings	Implementation of Mitigation Measure 4.1-2(a).

Heritage Oaks Estates East Project - Buildout Pursuant to General Plan Alternative Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Heritage Oaks Estates East Project - Buildout Pursuant to General Plan Alternative
Construction Start Date	4/1/2025
Operational Year	2034
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	21.0
Location	39.003174550138, -121.41987676256036
County	Yuba
City	Wheatland
Air District	Feather River AQMD
Air Basin	Sacramento Valley
TAZ	344
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Single Family Housing	594	Dwelling Unit	123	1,158,300	6,957,437	—	1,717	—
City Park	17.8	Acre	17.8	0.00	775,368	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.5	13.9	31.7	33.2	0.06	1.37	3.07	3.50	1.26	0.74	1.30	—	7,249	7,249	0.33	0.40	14.6	7,392
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.5	14.0	16.1	30.0	0.04	0.49	3.07	3.56	0.45	0.74	1.19	—	7,010	7,010	0.36	0.41	0.42	7,140
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.2	9.85	10.7	20.7	0.03	0.44	2.17	2.47	0.41	0.52	0.80	—	4,994	4,994	0.25	0.29	4.49	5,090
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.86	1.80	1.94	3.77	< 0.005	0.08	0.40	0.45	0.07	0.10	0.15	—	827	827	0.04	0.05	0.74	843

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.05	3.41	31.7	31.5	0.06	1.37	0.20	1.54	1.26	0.05	1.30	—	6,826	6,826	0.28	0.06	0.88	6,852
2026	14.5	13.9	14.6	33.2	0.04	0.43	3.07	3.50	0.39	0.74	1.13	—	7,249	7,249	0.33	0.40	14.6	7,392
2027	14.2	13.8	13.8	31.6	0.04	0.38	3.07	3.45	0.35	0.74	1.09	—	7,152	7,152	0.33	0.39	13.1	7,291
2028	14.1	13.7	13.0	30.4	0.04	0.34	3.07	3.41	0.31	0.74	1.05	—	7,051	7,051	0.23	0.39	11.8	7,186
2029	13.9	13.6	12.4	29.1	0.04	0.31	3.07	3.39	0.29	0.74	1.03	—	6,948	6,948	0.23	0.37	10.5	7,075
2030	13.8	13.4	12.0	28.0	0.04	0.30	3.07	3.37	0.26	0.74	1.00	—	6,844	6,844	0.21	0.36	9.30	6,967
2031	13.7	13.3	11.5	27.0	0.04	0.26	3.07	3.34	0.24	0.74	0.98	—	6,737	6,737	0.21	0.28	8.17	6,834
2032	13.6	13.3	11.1	26.0	0.04	0.24	3.07	3.32	0.23	0.74	0.96	—	6,634	6,634	0.19	0.27	7.11	6,726
2033	13.5	13.2	10.7	25.2	0.04	0.22	3.07	3.30	0.21	0.74	0.94	—	6,536	6,536	0.19	0.26	6.16	6,623
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	14.5	14.0	16.1	30.0	0.04	0.49	3.07	3.56	0.45	0.74	1.19	—	7,010	7,010	0.36	0.41	0.42	7,140
2026	14.2	13.8	15.1	28.7	0.04	0.43	3.07	3.50	0.40	0.74	1.13	—	6,924	6,924	0.27	0.40	0.38	7,052
2027	14.1	13.7	14.3	27.6	0.04	0.38	3.07	3.46	0.35	0.74	1.09	—	6,836	6,836	0.27	0.39	0.34	6,960
2028	14.0	13.6	13.5	26.6	0.04	0.34	3.07	3.41	0.31	0.74	1.05	—	6,742	6,742	0.25	0.39	0.30	6,866
2029	13.8	13.5	12.8	25.6	0.04	0.31	3.07	3.39	0.29	0.74	1.03	—	6,645	6,645	0.25	0.38	0.27	6,765
2030	13.7	13.3	12.4	24.8	0.04	0.30	3.07	3.37	0.26	0.74	1.00	—	6,548	6,548	0.23	0.37	0.24	6,664
2031	13.6	13.2	11.9	24.0	0.04	0.26	3.07	3.34	0.24	0.74	0.98	—	6,447	6,447	0.22	0.37	0.21	6,562
2032	13.4	13.2	11.4	23.2	0.04	0.24	3.07	3.32	0.23	0.74	0.96	—	6,349	6,349	0.21	0.36	0.18	6,461
2033	13.4	13.1	11.0	22.6	0.04	0.22	3.07	3.30	0.21	0.74	0.94	—	6,256	6,256	0.21	0.34	0.16	6,364
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.64	1.41	10.6	11.8	0.02	0.44	0.21	0.65	0.41	0.05	0.46	—	2,460	2,460	0.10	0.04	0.46	2,474
2026	10.2	9.85	10.7	20.7	0.03	0.31	2.17	2.47	0.28	0.52	0.80	—	4,994	4,994	0.25	0.29	4.49	5,090

2027	10.1	9.78	10.1	19.8	0.03	0.27	2.17	2.44	0.25	0.52	0.77	—	4,929	4,929	0.18	0.28	4.04	5,021
2028	10.0	9.73	9.55	19.2	0.03	0.24	2.17	2.42	0.23	0.52	0.75	—	4,875	4,875	0.18	0.28	3.64	4,966
2029	9.86	9.64	9.06	18.5	0.03	0.22	2.17	2.39	0.21	0.52	0.73	—	4,791	4,791	0.17	0.27	3.23	4,879
2030	9.79	9.52	8.75	17.8	0.03	0.21	2.17	2.38	0.19	0.52	0.71	—	4,721	4,721	0.16	0.26	2.87	4,806
2031	9.73	9.47	8.38	17.2	0.03	0.19	2.17	2.36	0.17	0.52	0.69	—	4,648	4,648	0.16	0.26	2.52	4,731
2032	9.69	9.44	8.05	16.8	0.03	0.18	2.17	2.35	0.16	0.52	0.68	—	4,590	4,590	0.14	0.25	2.20	4,670
2033	3.14	3.08	2.32	4.87	0.01	0.05	0.65	0.70	0.04	0.16	0.20	—	1,348	1,348	0.04	0.05	0.57	1,366
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.30	0.26	1.93	2.16	< 0.005	0.08	0.04	0.12	0.07	0.01	0.08	—	407	407	0.02	0.01	0.08	410
2026	1.86	1.80	1.94	3.77	< 0.005	0.06	0.40	0.45	0.05	0.09	0.15	—	827	827	0.04	0.05	0.74	843
2027	1.84	1.78	1.84	3.62	< 0.005	0.05	0.40	0.44	0.05	0.09	0.14	—	816	816	0.03	0.05	0.67	831
2028	1.83	1.77	1.74	3.51	< 0.005	0.04	0.40	0.44	0.04	0.10	0.14	—	807	807	0.03	0.05	0.60	822
2029	1.80	1.76	1.65	3.37	< 0.005	0.04	0.40	0.44	0.04	0.09	0.13	—	793	793	0.03	0.04	0.54	808
2030	1.79	1.74	1.60	3.26	< 0.005	0.04	0.40	0.43	0.03	0.09	0.13	—	782	782	0.03	0.04	0.47	796
2031	1.78	1.73	1.53	3.15	< 0.005	0.03	0.40	0.43	0.03	0.09	0.13	—	769	769	0.03	0.04	0.42	783
2032	1.77	1.72	1.47	3.06	< 0.005	0.03	0.40	0.43	0.03	0.10	0.12	—	760	760	0.02	0.04	0.36	773
2033	0.57	0.56	0.42	0.89	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	223	223	0.01	0.01	0.09	226

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	58.9	56.1	33.1	256	0.61	1.51	51.6	53.1	1.49	13.1	14.6	270	73,650	73,920	29.9	2.12	94.7	75,395
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	54.3	51.6	36.3	185	0.56	1.49	51.6	53.1	1.47	13.1	14.6	270	68,863	69,133	30.1	2.32	10.5	70,589

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	54.9	52.6	27.4	199	0.52	0.88	50.9	51.8	0.86	12.9	13.8	270	60,181	60,451	29.8	2.21	45.6	61,902
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.0	9.60	5.00	36.3	0.10	0.16	9.28	9.45	0.16	2.36	2.51	44.7	9,964	10,008	4.94	0.37	7.55	10,249

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.0	21.1	18.6	216	0.52	0.35	51.6	51.9	0.33	13.1	13.4	—	52,549	52,549	1.65	1.93	86.4	53,251
Area	35.4	34.7	10.2	38.1	0.06	0.81	—	0.81	0.81	—	0.81	0.00	12,597	12,597	0.24	0.02	—	12,611
Energy	0.51	0.26	4.36	1.86	0.03	0.35	—	0.35	0.35	—	0.35	—	8,368	8,368	0.95	0.07	—	8,411
Water	—	—	—	—	—	—	—	—	—	—	—	41.4	136	177	4.27	0.10	—	315
Waste	—	—	—	—	—	—	—	—	—	—	—	229	0.00	229	22.8	0.00	—	799
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.30	8.30
Total	58.9	56.1	33.1	256	0.61	1.51	51.6	53.1	1.49	13.1	14.6	270	73,650	73,920	29.9	2.12	94.7	75,395
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	21.5	19.6	22.1	179	0.47	0.35	51.6	51.9	0.33	13.1	13.4	—	47,852	47,852	1.82	2.13	2.24	48,535
Area	32.3	31.8	9.85	4.19	0.06	0.80	—	0.80	0.80	—	0.80	0.00	12,507	12,507	0.24	0.02	—	12,520
Energy	0.51	0.26	4.36	1.86	0.03	0.35	—	0.35	0.35	—	0.35	—	8,368	8,368	0.95	0.07	—	8,411
Water	—	—	—	—	—	—	—	—	—	—	—	41.4	136	177	4.27	0.10	—	315
Waste	—	—	—	—	—	—	—	—	—	—	—	229	0.00	229	22.8	0.00	—	799
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.30	8.30

Total	54.3	51.6	36.3	185	0.56	1.49	51.6	53.1	1.47	13.1	14.6	270	68,863	69,133	30.1	2.32	10.5	70,589
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	21.5	19.6	20.7	180	0.48	0.35	50.9	51.2	0.33	12.9	13.2	—	48,823	48,823	1.72	2.04	37.3	49,511
Area	33.0	32.8	2.37	17.6	0.01	0.19	—	0.19	0.18	—	0.18	0.00	2,854	2,854	0.05	0.01	—	2,857
Energy	0.51	0.26	4.36	1.86	0.03	0.35	—	0.35	0.35	—	0.35	—	8,368	8,368	0.95	0.07	—	8,411
Water	—	—	—	—	—	—	—	—	—	—	—	41.4	136	177	4.27	0.10	—	315
Waste	—	—	—	—	—	—	—	—	—	—	—	229	0.00	229	22.8	0.00	—	799
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.30	8.30
Total	54.9	52.6	27.4	199	0.52	0.88	50.9	51.8	0.86	12.9	13.8	270	60,181	60,451	29.8	2.21	45.6	61,902
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.92	3.57	3.77	32.8	0.09	0.06	9.28	9.35	0.06	2.36	2.42	—	8,083	8,083	0.29	0.34	6.17	8,197
Area	6.02	5.98	0.43	3.22	< 0.005	0.03	—	0.03	0.03	—	0.03	0.00	473	473	0.01	< 0.005	—	473
Energy	0.09	0.05	0.80	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	1,385	1,385	0.16	0.01	—	1,393
Water	—	—	—	—	—	—	—	—	—	—	—	6.86	22.5	29.3	0.71	0.02	—	52.1
Waste	—	—	—	—	—	—	—	—	—	—	—	37.8	0.00	37.8	3.78	0.00	—	132
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.37	1.37
Total	10.0	9.60	5.00	36.3	0.10	0.16	9.28	9.45	0.16	2.36	2.51	44.7	9,964	10,008	4.94	0.37	7.55	10,249

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.73	1.65	< 0.005	0.07	—	0.07	0.07	—	0.07	—	290	290	0.01	< 0.005	—	291
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.32	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	48.0	48.0	< 0.005	< 0.005	—	48.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.33	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	199	199	0.01	0.01	0.77	202
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.92	9.92	< 0.005	< 0.005	0.02	10.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.70	6.50	6.20	0.01	0.27	—	0.27	0.25	—	0.25	—	1,446	1,446	0.06	0.01	—	1,451
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.19	1.13	< 0.005	0.05	—	0.05	0.05	—	0.05	—	239	239	0.01	< 0.005	—	240
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.08	1.52	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	227	227	0.01	0.01	0.88	231
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	45.3	45.3	< 0.005	< 0.005	0.08	46.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.51	7.51	< 0.005	< 0.005	0.01	7.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	108	108	< 0.005	< 0.005	—	108
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.9	17.9	< 0.005	< 0.005	—	17.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.22	1.12	1.17	12.2	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,154	2,154	0.13	0.09	0.24	2,184
Vendor	0.18	0.08	3.37	1.20	0.01	0.03	0.48	0.51	0.03	0.13	0.16	—	1,893	1,893	0.10	0.28	0.12	1,980
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.56	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.5	99.5	0.01	< 0.005	0.18	101
Vendor	0.01	< 0.005	0.15	0.05	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	85.2	85.2	< 0.005	0.01	0.09	89.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.5	16.5	< 0.005	< 0.005	0.03	16.7
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.1	14.1	< 0.005	< 0.005	0.02	14.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.77	7.04	9.26	0.02	0.27	—	0.27	0.25	—	0.25	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.28	1.12	0.79	15.0	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,380	2,380	0.11	0.09	8.63	2,417
Vendor	0.17	0.07	2.93	1.09	0.01	0.02	0.48	0.51	0.02	0.13	0.15	—	1,862	1,862	0.10	0.28	4.23	1,952
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.09	0.99	1.03	11.3	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,110	2,110	0.06	0.09	0.22	2,137
Vendor	0.16	0.06	3.14	1.11	0.01	0.03	0.48	0.51	0.03	0.13	0.16	—	1,862	1,862	0.10	0.28	0.11	1,948
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.78	0.72	0.67	8.19	0.00	0.00	1.52	1.52	0.00	0.36	0.36	—	1,547	1,547	0.09	0.06	2.66	1,570
Vendor	0.12	0.05	2.20	0.78	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,330	1,330	0.07	0.20	1.30	1,393
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.12	1.49	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	256	256	0.01	0.01	0.44	260
Vendor	0.02	0.01	0.40	0.14	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	220	220	0.01	0.03	0.21	231
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.15	1.07	0.70	13.8	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,331	2,331	0.11	0.09	7.84	2,367
Vendor	0.17	0.06	2.73	1.02	0.01	0.02	0.48	0.51	0.02	0.13	0.15	—	1,825	1,825	0.10	0.27	3.70	1,911
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.05	0.95	0.95	10.4	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,066	2,066	0.06	0.09	0.20	2,094

Vendor	0.16	0.06	2.92	1.06	0.01	0.03	0.48	0.51	0.03	0.13	0.16	—	1,825	1,825	0.10	0.27	0.10	1,908
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.75	0.69	0.61	7.54	0.00	0.00	1.52	1.52	0.00	0.36	0.36	—	1,515	1,515	0.03	0.06	2.42	1,536
Vendor	0.12	0.05	2.05	0.74	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,304	1,304	0.07	0.19	1.14	1,364
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.11	1.38	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	251	251	0.01	0.01	0.40	254
Vendor	0.02	0.01	0.37	0.14	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	216	216	0.01	0.03	0.19	226
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	0.71	6.39	9.26	0.02	0.22	—	0.22	0.20	—	0.20	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.17	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.11	1.02	0.63	12.8	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,283	2,283	0.04	0.09	7.09	2,317
Vendor	0.15	0.05	2.53	0.97	0.01	0.02	0.48	0.51	0.02	0.13	0.15	—	1,781	1,781	0.09	0.27	3.28	1,866
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.91	0.87	9.63	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,025	2,025	0.05	0.09	0.18	2,052
Vendor	0.15	0.05	2.71	0.99	0.01	0.02	0.48	0.51	0.02	0.13	0.15	—	1,781	1,781	0.09	0.27	0.08	1,863
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.66	0.56	7.06	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,488	1,488	0.03	0.06	2.19	1,510
Vendor	0.11	0.04	1.90	0.70	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,276	1,276	0.06	0.19	1.01	1,335
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.10	1.29	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	246	246	0.01	0.01	0.36	250

Vendor	0.02	0.01	0.35	0.13	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	211	211	0.01	0.03	0.17	221
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.58	12.9	0.02	0.28	—	0.28	0.25	—	0.25	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.69	6.13	9.22	0.02	0.20	—	0.20	0.18	—	0.18	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.12	1.68	< 0.005	0.04	—	0.04	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.99	0.97	0.55	11.8	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,238	2,238	0.03	0.08	6.35	2,270
Vendor	0.14	0.05	2.35	0.92	0.01	0.02	0.48	0.51	0.02	0.13	0.15	—	1,731	1,731	0.08	0.26	2.87	1,813
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.89	0.87	0.79	8.90	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	1,986	1,986	0.05	0.09	0.16	2,013
Vendor	0.13	0.05	2.52	0.95	0.01	0.02	0.48	0.51	0.02	0.13	0.15	—	1,732	1,732	0.08	0.26	0.07	1,810
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.64	0.62	0.50	6.50	0.00	0.00	1.52	1.52	0.00	0.36	0.36	—	1,456	1,456	0.03	0.06	1.96	1,477
Vendor	0.10	0.04	1.76	0.67	0.01	0.02	0.34	0.36	0.02	0.09	0.11	—	1,237	1,237	0.06	0.18	0.89	1,294
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.19	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	241	241	0.01	0.01	0.32	245
Vendor	0.02	0.01	0.32	0.12	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	205	205	0.01	0.03	0.15	214
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.12	0.94	8.39	12.9	0.02	0.26	—	0.26	0.24	—	0.24	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	0.67	5.99	9.20	0.02	0.19	—	0.19	0.17	—	0.17	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.09	1.68	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.94	0.85	0.55	11.0	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,196	2,196	0.03	0.08	5.65	2,227
Vendor	0.13	0.05	2.21	0.88	0.01	0.02	0.48	0.51	0.01	0.13	0.14	—	1,679	1,679	0.07	0.24	2.52	1,755
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.84	0.76	0.71	8.24	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	1,949	1,949	0.05	0.09	0.15	1,976

Vendor	0.12	0.05	2.37	0.90	0.01	0.02	0.48	0.51	0.01	0.13	0.14	—	1,679	1,679	0.07	0.24	0.07	1,754
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.60	0.54	0.45	6.01	0.00	0.00	1.52	1.52	0.00	0.36	0.36	—	1,429	1,429	0.03	0.06	1.74	1,450
Vendor	0.09	0.04	1.66	0.64	0.01	0.02	0.34	0.36	0.01	0.09	0.10	—	1,199	1,199	0.05	0.17	0.78	1,253
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.10	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	237	237	0.01	0.01	0.29	240
Vendor	0.02	0.01	0.30	0.12	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	199	199	0.01	0.03	0.13	207
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Building Construction (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.10	0.92	8.12	12.8	0.02	0.24	—	0.24	0.22	—	0.22	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	0.66	5.80	9.18	0.02	0.17	—	0.17	0.16	—	0.16	—	1,712	1,712	0.07	0.01	—	1,718
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.06	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	283	283	0.01	< 0.005	—	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.88	0.80	0.47	10.2	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,157	2,157	0.03	0.01	5.00	2,167
Vendor	0.12	0.05	2.07	0.83	0.01	0.01	0.48	0.49	0.01	0.13	0.14	—	1,618	1,618	0.07	0.24	2.17	1,695
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.79	0.70	0.63	7.65	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	1,915	1,915	0.04	0.09	0.13	1,942
Vendor	0.12	0.05	2.22	0.85	0.01	0.01	0.48	0.49	0.01	0.13	0.14	—	1,619	1,619	0.07	0.24	0.06	1,693
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.51	0.39	5.57	0.00	0.00	1.52	1.52	0.00	0.36	0.36	—	1,404	1,404	0.03	0.06	1.54	1,423
Vendor	0.09	0.03	1.56	0.60	0.01	0.01	0.34	0.35	0.01	0.09	0.10	—	1,156	1,156	0.05	0.17	0.67	1,210
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.07	1.02	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	232	232	< 0.005	0.01	0.26	236

Vendor	0.02	0.01	0.28	0.11	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	191	191	0.01	0.03	0.11	200
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Building Construction (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.87	12.8	0.02	0.22	—	0.22	0.21	—	0.21	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.77	0.64	5.64	9.16	0.02	0.16	—	0.16	0.15	—	0.15	—	1,717	1,717	0.07	0.01	—	1,723
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.03	1.67	< 0.005	0.03	—	0.03	0.03	—	0.03	—	284	284	0.01	< 0.005	—	285
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.75	0.39	9.45	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,121	2,121	0.03	0.01	4.39	2,131
Vendor	0.11	0.05	1.94	0.79	0.01	0.01	0.48	0.49	0.01	0.13	0.14	—	1,558	1,558	0.06	0.23	1.85	1,630
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.67	0.56	7.08	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	1,883	1,883	0.04	0.09	0.11	1,910
Vendor	0.11	0.03	2.08	0.81	0.01	0.01	0.48	0.49	0.01	0.13	0.14	—	1,559	1,559	0.06	0.23	0.05	1,629
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.54	0.48	0.34	5.20	0.00	0.00	1.53	1.53	0.00	0.36	0.36	—	1,384	1,384	0.02	0.06	1.35	1,404
Vendor	0.08	0.03	1.45	0.57	0.01	0.01	0.34	0.35	0.01	0.09	0.10	—	1,116	1,116	0.04	0.17	0.57	1,167
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	0.95	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	229	229	< 0.005	0.01	0.22	232
Vendor	0.01	0.01	0.26	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	185	185	0.01	0.03	0.10	193
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. Building Construction (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	7.67	12.8	0.02	0.20	—	0.20	0.19	—	0.19	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.62	2.70	< 0.005	0.04	—	0.04	0.04	—	0.04	—	507	507	0.02	< 0.005	—	508
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	83.9	83.9	< 0.005	< 0.005	—	84.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.71	0.39	8.82	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	2,089	2,089	0.03	0.01	3.82	2,098
Vendor	0.10	0.04	1.81	0.75	0.01	0.01	0.48	0.49	0.01	0.13	0.14	—	1,499	1,499	0.06	0.22	1.58	1,567
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.65	0.63	0.48	6.66	0.00	0.00	2.16	2.16	0.00	0.51	0.51	—	1,855	1,855	0.04	0.09	0.10	1,882

Vendor	0.09	0.03	1.94	0.77	0.01	0.01	0.48	0.49	0.01	0.13	0.14	—	1,500	1,500	0.06	0.22	0.04	1,567
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.10	1.42	0.00	0.00	0.45	0.45	0.00	0.11	0.11	—	402	402	0.01	< 0.005	0.35	404
Vendor	0.02	0.01	0.40	0.16	< 0.005	< 0.005	0.10	0.10	< 0.005	0.03	0.03	—	317	317	0.01	0.05	0.14	331
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	66.6	66.6	< 0.005	< 0.005	0.06	66.8
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	52.5	52.5	< 0.005	0.01	0.02	54.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.95	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.63	2.19	< 0.005	0.08	—	0.08	0.07	—	0.07	—	331	331	0.01	< 0.005	—	332
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.30	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.8	54.8	< 0.005	< 0.005	—	55.0
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.06	1.14	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	171	171	0.01	0.01	0.66	173
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	0.86	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	151	151	0.01	0.01	0.02	153
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.0	34.0	< 0.005	< 0.005	0.06	34.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.63	5.63	< 0.005	< 0.005	0.01	5.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.35	2.35	< 0.005	< 0.005	—	2.36
Architectural Coatings	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.39
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.23	2.44	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	431	431	0.03	0.02	0.05	437
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.79	7.79	< 0.005	< 0.005	0.01	7.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.61	0.81	< 0.005	0.02	—	0.02	0.02	—	0.02	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	8.09	8.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architect Coatings	1.48	1.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.22	0.16	3.00	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	476	476	0.02	0.02	1.73	483
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.21	2.25	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	422	422	0.01	0.02	0.04	427
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.13	1.64	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	309	309	0.02	0.01	0.53	314
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	51.2	51.2	< 0.005	< 0.005	0.09	52.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.29. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.59	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	8.09	8.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architectural Coatings	1.48	1.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	0.14	2.76	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	466	466	0.02	0.02	1.57	473
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.19	2.07	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	413	413	0.01	0.02	0.04	419
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.51	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	303	303	0.01	0.01	0.48	307
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	50.2	50.2	< 0.005	< 0.005	0.08	50.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.31. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.58	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.6	95.6	< 0.005	< 0.005	—	96.0
Architectural Coatings	8.11	8.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.11	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9

Architect Coatings	1.48	1.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.13	2.56	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	457	457	0.01	0.02	1.42	463
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.17	1.93	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	405	405	0.01	0.02	0.04	410
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.11	1.41	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	298	298	0.01	0.01	0.44	302
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	49.3	49.3	< 0.005	< 0.005	0.07	50.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.33. Architectural Coating (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.57	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	8.09	8.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architectural Coatings	1.48	1.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.19	0.11	2.36	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	448	448	0.01	0.02	1.27	454
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.17	0.16	1.78	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	397	397	0.01	0.02	0.03	403
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.10	1.30	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	291	291	0.01	0.01	0.39	295
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	48.2	48.2	< 0.005	< 0.005	0.06	48.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.35. Architectural Coating (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.56	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	8.09	8.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architect Coatings	1.48	1.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.11	2.19	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	439	439	0.01	0.02	1.13	445
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.14	1.65	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	390	390	0.01	0.02	0.03	395
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.09	1.20	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	286	286	0.01	0.01	0.35	290
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	47.3	47.3	< 0.005	< 0.005	0.06	48.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.37. Architectural Coating (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.78	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.4	95.4	< 0.005	< 0.005	—	95.7
Architectural Coatings	8.09	8.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8

Architectural Coatings	1.48	1.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.09	2.03	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	431	431	0.01	< 0.005	1.00	433
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.13	1.53	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	383	383	0.01	0.02	0.03	388
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.08	1.11	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	281	281	0.01	0.01	0.31	285
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.20	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	46.5	46.5	< 0.005	< 0.005	0.05	47.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.39. Architectural Coating (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.77	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	95.6	95.6	< 0.005	< 0.005	—	95.9
Architectural Coatings	8.11	8.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.9

Architect Coatings	1.48	1.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.15	0.08	1.89	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	424	424	0.01	< 0.005	0.88	426
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.11	1.42	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	377	377	0.01	0.02	0.02	382
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.07	1.04	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	277	277	< 0.005	0.01	0.27	281
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.19	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	45.8	45.8	< 0.005	< 0.005	0.04	46.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.41. Architectural Coating (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.76	1.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	11.3	11.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.9	31.9	< 0.005	< 0.005	—	32.0
Architectural Coatings	2.70	2.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.28	5.28	< 0.005	< 0.005	—	5.30

Architectural Coatings	0.49	0.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	0.08	1.76	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	418	418	0.01	< 0.005	0.76	420
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.13	0.10	1.33	0.00	0.00	0.43	0.43	0.00	0.10	0.10	—	371	371	0.01	0.02	0.02	376
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.32	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	90.9	90.9	< 0.005	< 0.005	0.08	91.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.01	15.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	23.0	21.1	18.6	216	0.52	0.35	51.6	51.9	0.33	13.1	13.4	—	52,549	52,549	1.65	1.93	86.4	53,251
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	23.0	21.1	18.6	216	0.52	0.35	51.6	51.9	0.33	13.1	13.4	—	52,549	52,549	1.65	1.93	86.4	53,251
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	21.5	19.6	22.1	179	0.47	0.35	51.6	51.9	0.33	13.1	13.4	—	47,852	47,852	1.82	2.13	2.24	48,535
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	21.5	19.6	22.1	179	0.47	0.35	51.6	51.9	0.33	13.1	13.4	—	47,852	47,852	1.82	2.13	2.24	48,535
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	3.92	3.57	3.77	32.8	0.09	0.06	9.28	9.35	0.06	2.36	2.42	—	8,083	8,083	0.29	0.34	6.17	8,197
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.92	3.57	3.77	32.8	0.09	0.06	9.28	9.35	0.06	2.36	2.42	—	8,083	8,083	0.29	0.34	6.17	8,197

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,830	2,830	0.46	0.06	—	2,858
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,830	2,830	0.46	0.06	—	2,858
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,830	2,830	0.46	0.06	—	2,858
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,830	2,830	0.46	0.06	—	2,858
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	469	469	0.08	0.01	—	473
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	469	469	0.08	0.01	—	473

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.51	0.26	4.36	1.86	0.03	0.35	—	0.35	0.35	—	0.35	—	5,538	5,538	0.49	0.01	—	5,553
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.51	0.26	4.36	1.86	0.03	0.35	—	0.35	0.35	—	0.35	—	5,538	5,538	0.49	0.01	—	5,553
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.51	0.26	4.36	1.86	0.03	0.35	—	0.35	0.35	—	0.35	—	5,538	5,538	0.49	0.01	—	5,553
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.51	0.26	4.36	1.86	0.03	0.35	—	0.35	0.35	—	0.35	—	5,538	5,538	0.49	0.01	—	5,553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.09	0.05	0.80	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	917	917	0.08	< 0.005	—	919
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.09	0.05	0.80	0.34	0.01	0.06	—	0.06	0.06	—	0.06	—	917	917	0.08	< 0.005	—	919

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.15	0.58	9.85	4.19	0.06	0.80	—	0.80	0.80	—	0.80	0.00	12,507	12,507	0.24	0.02	—	12,520

Consum Products	25.2	25.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	5.96	5.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	3.08	2.91	0.31	33.9	< 0.005	0.02	—	0.02	0.01	—	0.01	—	90.1	90.1	< 0.005	< 0.005	—	90.4
Total	35.4	34.7	10.2	38.1	0.06	0.81	—	0.81	0.81	—	0.81	0.00	12,597	12,597	0.24	0.02	—	12,611
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	1.15	0.58	9.85	4.19	0.06	0.80	—	0.80	0.80	—	0.80	0.00	12,507	12,507	0.24	0.02	—	12,520
Consumer Products	25.2	25.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	5.96	5.96	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	32.3	31.8	9.85	4.19	0.06	0.80	—	0.80	0.80	—	0.80	0.00	12,507	12,507	0.24	0.02	—	12,520
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.05	0.02	0.40	0.17	< 0.005	0.03	—	0.03	0.03	—	0.03	0.00	465	465	0.01	< 0.005	—	466
Consumer Products	4.60	4.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.09	1.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.28	0.26	0.03	3.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.36	7.36	< 0.005	< 0.005	—	7.38
Total	6.02	5.98	0.43	3.22	< 0.005	0.03	—	0.03	0.03	—	0.03	0.00	473	473	0.01	< 0.005	—	473

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	41.4	128	169	4.27	0.10	—	306
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	8.18	8.18	< 0.005	< 0.005	—	8.26
Total	—	—	—	—	—	—	—	—	—	—	—	41.4	136	177	4.27	0.10	—	315
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	41.4	128	169	4.27	0.10	—	306
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	8.18	8.18	< 0.005	< 0.005	—	8.26
Total	—	—	—	—	—	—	—	—	—	—	—	41.4	136	177	4.27	0.10	—	315
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	6.86	21.1	28.0	0.71	0.02	—	50.7
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	1.35	1.35	< 0.005	< 0.005	—	1.37
Total	—	—	—	—	—	—	—	—	—	—	—	6.86	22.5	29.3	0.71	0.02	—	52.1

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	228	0.00	228	22.8	0.00	—	797
City Park	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	0.08	0.00	—	2.89
Total	—	—	—	—	—	—	—	—	—	—	—	229	0.00	229	22.8	0.00	—	799
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	228	0.00	228	22.8	0.00	—	797
City Park	—	—	—	—	—	—	—	—	—	—	—	0.83	0.00	0.83	0.08	0.00	—	2.89
Total	—	—	—	—	—	—	—	—	—	—	—	229	0.00	229	22.8	0.00	—	799
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	37.7	0.00	37.7	3.77	0.00	—	132
City Park	—	—	—	—	—	—	—	—	—	—	—	0.14	0.00	0.14	0.01	0.00	—	0.48
Total	—	—	—	—	—	—	—	—	—	—	—	37.8	0.00	37.8	3.78	0.00	—	132

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.30	8.30
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.30	8.30
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.30	8.30
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.30	8.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.37	1.37
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.37	1.37

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description

Site Preparation	Site Preparation	4/1/2025	4/28/2025	5.00	20.0	—
Grading	Grading	4/29/2025	8/18/2025	5.00	80.0	—
Building Construction	Building Construction	12/9/2025	4/18/2033	5.00	1,920	—
Paving	Paving	8/19/2025	12/8/2025	5.00	80.0	—
Architectural Coating	Architectural Coating	12/23/2025	5/2/2033	5.00	1,920	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	14.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	14.3	LDA,LDT1,LDT2
Grading	Vendor	—	8.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	214	14.3	LDA,LDT1,LDT2
Building Construction	Vendor	63.5	8.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	14.3	LDA,LDT1,LDT2
Paving	Vendor	—	8.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	42.8	14.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.80	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	2,345,558	781,853	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Paving	0.00	0.00	0.00	0.00	6.55

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	6.55	0%
City Park	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005
2030	0.00	204	0.03	< 0.005
2031	0.00	204	0.03	< 0.005
2032	0.00	204	0.03	< 0.005
2033	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	5,138	5,138	5,138	1,875,407	72,892	72,892	72,892	26,605,594
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)

Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	594
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	69

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
2345557.5	781,853	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	5,064,271	204	0.0330	0.0040	17,279,475
City Park	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	21,617,041	99,516,070
City Park	0.00	9,074,060

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	422	—
City Park	1.53	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	Lot acreage adjusted based on applicant provided information City park assumed to be all landscaped
Construction: Construction Phases	Demolition not required Phase timing adjusted based on applicant provided air quality questionnaire Based on typical construction practices, architectural coating assumed to start two weeks after the start of building construction and last for the same number of days
Construction: Architectural Coatings	Default
Operations: Hearths	Wood stoves not proposed Natural gas only fireplaces
Construction: Dust From Material Movement	No soil movement
Operations: Vehicle Data	Trip rates and VMT adjusted consistent with TIS prepared by TJKM.

Appendix D

Environmental Noise Assessment

Heritage Oaks Estate East Wheatland

City of Wheatland, California

May 1, 2024

Project #230807

Prepared for:

Raney Planning and & Management
1501 Sports Drive
Sacramento, California 95834

Prepared by:

Saxelby Acoustics LLC

Luke Saxelby
12004
Expires January 31, 2027

Luke Saxelby, INCE Bd. Cert.
Principal Consultant
Board Certified, Institute of Noise Control Engineering (INCE)

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Roseville, CA 95678

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INTRODUCTION

The Heritage Oaks Estates East Wheatland project consists of the development of a single-family subdivision in the City of Wheatland, California. The primary noise source at the proposed residential uses is transportation noise emanating from State Route 65 and a Union Pacific Railroad to the east. The secondary noise source associated with this project is operational noise from the City's Wastewater Treatment Plant. Sensitive receptors in the project area include residential uses located the north and west of the proposed residences.

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

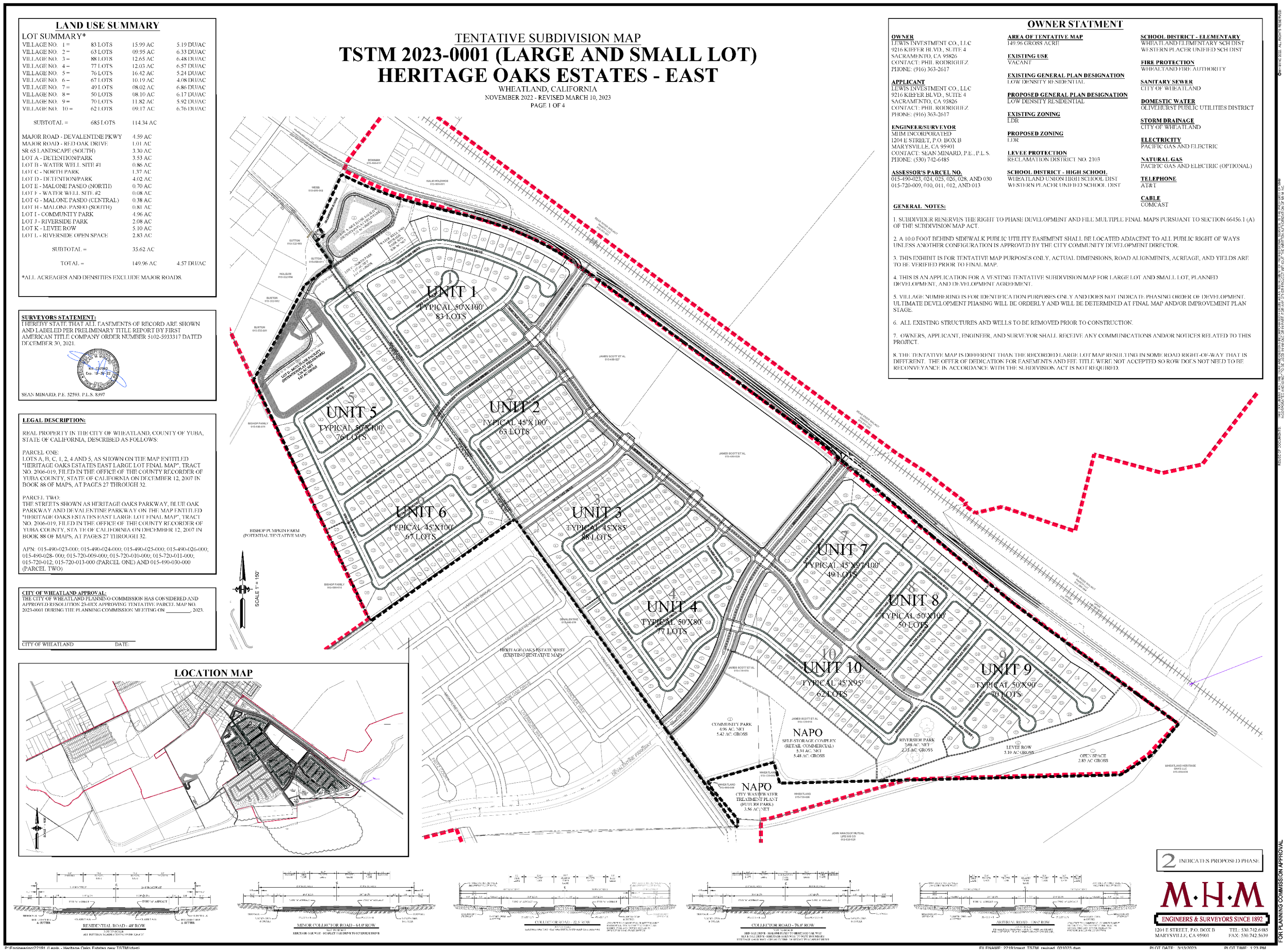
Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.



TENTATIVE SUBDIVISION MAP

TSTM 2023-0001 (LARGE AND SMALL LOT)

HERITAGE OAKS ESTATES - EAST

WHEATLAND, CALIFORNIA
NOVEMBER 2022 - REVISED MARCH 10, 2023
PAGE 1 OF 4

LAND USE SUMMARY

LOT SUMMARY*

VILLAGE NO. 1 =	83 LOTS	15.99 AC	5.19 DU/AC
VILLAGE NO. 2 =	63 LOTS	09.95 AC	6.33 DU/AC
VILLAGE NO. 3 =	88 LOTS	12.65 AC	6.48 DU/AC
VILLAGE NO. 4 =	77 LOTS	12.03 AC	6.57 DU/AC
VILLAGE NO. 5 =	76 LOTS	16.42 AC	5.24 DU/AC
VILLAGE NO. 6 =	67 LOTS	10.19 AC	4.08 DU/AC
VILLAGE NO. 7 =	49 LOTS	08.02 AC	6.86 DU/AC
VILLAGE NO. 8 =	50 LOTS	08.10 AC	6.17 DU/AC
VILLAGE NO. 9 =	70 LOTS	11.82 AC	5.92 DU/AC
VILLAGE NO. 10 =	62 LOTS	09.17 AC	6.76 DU/AC
SUBTOTAL =	685 LOTS	114.34 AC	

MAJOR ROAD - DEVALENTINE PKWY	4.59 AC	
MAJOR ROAD - RED OAK DRIVE	1.01 AC	
SR 65 LANDSCAPE (SOUTH)	3.30 AC	
LOT A - DETENTION/PARK	3.53 AC	
LOT B - WATER WELL SITE #1	0.86 AC	
LOT C - NORTH PARK	1.37 AC	
LOT D - DETENTION/PARK	4.02 AC	
LOT E - MALONE PASEO (NORTH)	0.70 AC	
LOT F - WATER WELL SITE #2	0.08 AC	
LOT G - MALONE PASEO (CENTRAL)	0.38 AC	
LOT H - MALONE PASEO (SOUTH)	0.81 AC	
LOT I - COMMUNITY PARK	4.96 AC	
LOT J - RIVERSIDE PARK	2.08 AC	
LOT K - LEVEE ROW	5.10 AC	
LOT L - RIVERSIDE OPEN SPACE	2.83 AC	
SUBTOTAL =	35.62 AC	
TOTAL =	149.96 AC	4.57 DU/AC

*ALL ACREAGES AND DENSITIES EXCLUDE MAJOR ROADS.

SURVEYORS STATEMENT:
I HEREBY STATE THAT ALL EASEMENTS OF RECORD ARE SHOWN AND LABELED PER PRELIMINARY TITLE REPORT BY FIRST AMERICAN TITLE COMPANY ORDER NUMBER 5102-5933317 DATED DECEMBER 30, 2021.

No. C52593
Exp. 12-31-22

SEAN MINARD, P.E. 52593, P.L.S. 8397

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF WHEATLAND, COUNTY OF YUBA, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL ONE:
LOTS A, B, C, 1, 2, 4 AND 5, AS SHOWN ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STATE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

PARCEL TWO:
THE STREETS SHOWN AS HERITAGE OAKS PARKWAY, BLUE OAK PARKWAY AND DEVALENTINE PARKWAY ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STATE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

APN: 015-490-023-000; 015-490-024-000; 015-490-025-000; 015-490-026-000; 015-490-028- 000; 015-720-009-000; 015-720-010-000; 015-720-011-000; 015-720-012; 015-720-013-000 (PARCEL ONE) AND 015-490-030-000 (PARCEL TWO)

CITY OF WHEATLAND APPROVAL:
THE CITY OF WHEATLAND PLANNING COMMISSION HAS CONSIDERED AND APPROVED RESOLUTION 23-0XX APPROVING TENTATIVE PARCEL MAP NO. 2023-0001 DURING THE PLANNING COMMISSION MEETING ON ________, 2023.

CITY OF WHEATLAND DATE:

OWNER STATMENT

OWNER
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

APPLICANT
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

ENGINEER/SURVEYOR
MHM INCORPORATED
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
CONTACT: SEAN MINARD, P.E., P.L.S.
PHONE: (530) 742-6485

ASSESSOR'S PARCEL NO.
015-490-023, 024, 025, 026, 028, AND 030
015-720-009, 010, 011, 012, AND 013

AREA OF TENTATIVE MAP
149.96 GROSS ACRE

EXISTING USE
VACANT

EXISTING GENERAL PLAN DESIGNATION
LOW DENSITY RESIDENTIAL

PROPOSED GENERAL PLAN DESIGNATION
LOW DENSITY RESIDENTIAL

EXISTING ZONING
LDR

PROPOSED ZONING
LDR

LEVEE PROTECTION
RECLAMATION DISTRICT NO. 2103

SCHOOL DISTRICT - HIGH SCHOOL
WHEATLAND UNION HIGH SCHOOL DIST
WESTERN PLACER UNIFIED SCHOOL DIST

SCHOOL DISTRICT - ELEMENTARY
WHEATLAND ELEMENTARY SCH DIST
WESTERN PLACER UNIFIED SCH DIST

FIRE PROTECTION
WHEATLAND FIRE AUTHORITY

SANITARY SEWER
CITY OF WHEATLAND

DOMESTIC WATER
OLIVEHURST PUBLIC UTILITIES DISTRICT

STORM DRAINAGE
CITY OF WHEATLAND

ELECTRICITY
PACIFIC GAS AND ELECTRIC

NATURAL GAS
PACIFIC GAS AND ELECTRIC (OPTIONAL)

TELEPHONE
AT&T

CABLE
COMCAST

GENERAL NOTES:

1. SUBDIVIDER RESERVES THE RIGHT TO PHASE DEVELOPMENT AND FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.1 (A) OF THE SUBDIVISION MAP ACT.

2. A 10.0 FOOT BEHIND SIDEWALK PUBLIC UTILITY EASEMENT SHALL BE LOCATED ADJACENT TO ALL PUBLIC RIGHT OF WAYS UNLESS ANOTHER CONFIGURATION IS APPROVED BY THE CITY COMMUNITY DEVELOPMENT DIRECTOR.

3. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY, ACTUAL DIMENSIONS, ROAD ALIGNMENTS, ACREAGE, AND YIELDS ARE TO BE VERIFIED PRIOR TO FINAL MAP.

4. THIS IS AN APPLICATION FOR A VESTING TENTATIVE SUBDIVISION MAP FOR LARGE LOT AND SMALL LOT, PLANNED DEVELOPMENT, AND DEVELOPMENT AGREEMENT.

5. VILLAGE NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING WILL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.

6. ALL EXISTING STRUCTURES AND WELLS TO BE REMOVED PRIOR TO CONSTRUCTION.

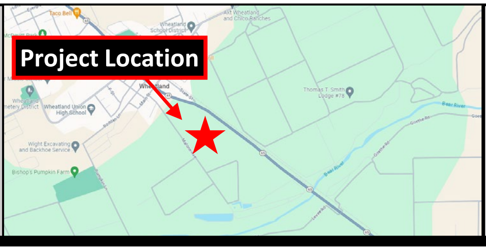
7. OWNERS, APPLICANT, ENGINEER, AND SURVEYOR SHALL RECEIVE ANY COMMUNICATIONS AND/OR NOTICES RELATED TO THIS PROJECT.

8. THE TENTATIVE MAP IS DIFFERENT THAN THE RECORDED LARGE LOT MAP RESULTING IN SOME ROAD RIGHT-OF-WAY THAT IS DIFFERENT. THE OFFER OF DEDICATION FOR EASEMENTS AND FEE TITLE WERE NOT ACCEPTED SO ROW DOES NOT NEED TO BE RECONVEYANCE IN ACCORDANCE WITH THE SUBDIVISION ACT IS NOT REQUIRED.

2 INDICATES PROPOSED PHASE

M·H·M
ENGINEERS & SURVEYORS SINCE 1892
1204 E STREET, P.O. BOX B TEL: 530.742.6485
MARYSVILLE, CA 95901 FAX: 530.742.5639

PLOT DATE: 3/13/2023 PLOT TIME: 1:23 PM



Heritage Oaks Estates East Wheatland

City of Wheatland, California

Figure 1

Project Site Plan

SAXELBY ACOUSTICS
Acoustics • Noise • Vibration

Heritage Oaks East Wheatland

City of Wheatland, California

Figure 2

Noise Measurement Sites

Legend

▭ Project Site

▲ Noise Measurement Site - Long Term

■ Noise Measurement Site - Short Term

250 ft 750 ft 1250 ft

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 09/27/2023

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration

The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise–including stationary mobile sources such as idling vehicles–attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING AND FUTURE NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses located west and north of the project site.

FUTURE TRAFFIC NOISE ENVIRONMENT AT OFF-SITE RECEPTORS

EXISTING GENERAL AMBIENT NOISE LEVELS

The existing noise environment in the project area is primarily defined by traffic on State Route 65 and the UPRR directly east of the project site.

To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at two locations near the project site and short-term noise level measurements at two locations. Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 and 831 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL 200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Site	Date	L_{dn}	Day L_{eq}	Day L_{50}	Day L_{max}	Night L_{eq}	Night L_{50}	Night L_{max}
LT-1: 100 Ft. from CT of Hwy 65	9/28/2023	72	67	65	86	66	59	86
LT-2: 170 Ft. from CT of Hwy 65	9/28/2023	65	60	58	77	59	54	77
ST-1: 1,670 Ft. from CT of Hwy 65	9/27/2023	N/A	37	36	53	N/A	N/A	N/A
ST-2: 70 Ft. from WWTP	9/27/2023	N/A	60	60	61	N/A	N/A	N/A

Notes:

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics 2023*

OFF-SITE TRAFFIC NOISE IMPACT ASSESSMENT METHODOLOGY

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors for Existing, Existing Plus Project, Cumulative, and Cumulative Plus Project conditions.

Noise levels due to traffic are calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn}, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the project traffic engineer (TJKM 2024), truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing and Cumulative conditions which would result from the project are provided in terms of L_{dn}.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations sensitive receptors may not receive full shielding from noise barriers or may be located at distances which vary from the assumed calculation distance.

Tables 3 and 4 summarize the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area. **Appendix C** provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 3: EXISTING TRAFFIC NOISE LEVELS AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Predicted Exterior Noise Level (dBA L_{dn}) at Closest Sensitive Receptors		
		Existing No Project	Existing + Project	Change
SR 65	North of Levee Road	57.0	57.2	0.2
SR 65	South of State Street	58.4	58.7	0.3
SR 65	South of Main Street	65.8	66.4	0.6
SR 65	North of 1st Street	66.7	66.9	0.2
Main Street	Malone Avenue to SR 65	48.7	49.9	1.2
Main Street	SR 65 to State Street	52.7	53.6	0.9

TABLE 4: CUMULATIVE TRAFFIC NOISE LEVELS AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Predicted Exterior Noise Level (dBA L_{dn}) at Closest Sensitive Receptors		
		Existing No Project	Existing + Project	Change
SR 65	North of Levee Road	57.2	57.4	0.2
SR 65	South of State Street	58.6	58.9	0.3
SR 65	South of Main Street	66.0	66.6	0.6
SR 65	North of 1st Street	66.9	67.1	0.2
Main Street	Malone Avenue to SR 65	48.9	50.1	1.2
Main Street	SR 65 to State Street	52.9	53.8	0.9

Based upon the data in **Tables 3 and 4**, the proposed project is predicted to result in a maximum traffic noise level increase of 1.2 dBA.

CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed project, including roads, water and sewer lines, and related infrastructure, noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in **Table 5**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 5: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximum Level, dBA at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 6** shows the typical vibration levels produced by construction equipment.

TABLE 6: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: *Transit Noise and Vibration Impact Assessment Guidelines.* Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

State Building Code, Title 24, Part 2 of the State of California Code of Regulations

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations, establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

LOCAL

City of Wheatland General Plan

POLICIES

9.G.1. The City shall prohibit development of new noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of **Table 7** (Table 9-1) as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated in the development design to achieve the standards set out in **Table 7** (Table 9-1).

9.G.2. The City shall require that noise created by new non-transportation sources be mitigated so as not to exceed the noise level standards of **Table 7** (Table 9-1) as measured immediately within the property line of lands designated for noise sensitive uses.

TABLE 7: NOISES LEVEL PERFORMANCE STANDARDS NEW PROJECTS AFFECTED BY OR INCLUDING NON-TRANSPORTATION SOURCES*

Noise Level Descriptor	Daytime	Nighttime
Hourly, L_{eq}, dB	50	45
Maximum Level, dB	70	65

Each of the noise levels specified above shall be lowered be five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

** For the purposes of compliance with the provisions of this section, the City defines transportation noise sources as traffic on public roadways, railroad lines operations, and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noises sources are presumed to be subject to local regulations. Non-transportation noise sources may include indrustrial operations, outdoor recreation facilities, HVAC units, and loading docks.*

9.G.5. The noise created by new transportation noise sources shall be mitigated so as not to exceed the levels specified in **Table 8** (Table 9-2) at outdoor activity areas or interior spaces of existing noise sensitive land uses.

TABLE 8: MAXIMUM ALLOWABLE NOISE EXPOSURE TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Areas[1] L_{eq}/CNEL dB	Interior Spaces	
		L_{eq}/CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	-	35
Churches, Meeting Halls	60[3]	-	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

[1] Where the location of outoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards with front yards facing the identified noise sources, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building façade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

9.G.6. New roadway improvement projects will be needed to accommodate development permitted according to the Land Use Diagram. Where existing noise-sensitive uses may be exposed to increased noise levels due to increased roadway capacity and increases in travel speeds associated with roadway improvements, the City will apply the following criteria to determine the significance of increases in noise related to roadway improvement projects:

a. Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant; and

b. Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant;

c. Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.

9.G.7. An increase of 3 dB L_{dn} or greater due to additional traffic volumes is considered a potentially significant impact.

Wheatland Municipal Code - 8.04.030 Prohibited noises.

H. Construction or Repairing of Buildings. The erection (including excavation), demolition, alteration or repair of any building other than between the hours of seven a.m. and ten p.m. on weekdays, except in case of urgent necessity in the interest of the public health and safety, and then only with a permit from the building inspector, which permit may be granted for a period not to exceed three days or less while the emergency continues and which permit may be renewed for periods of three days or less while the emergency continues. If the building inspector should determine that the public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or the excavation of streets and highways within the hours of ten p.m. and seven a.m. and if he or she shall further determine that loss or inconvenience would result to any party in interest, he or she may grant permission for such work to be done within the hours of ten p.m. and seven a.m., upon application being made at the time the permit for the work is awarded or during the progress of the work.

CRITERIA FOR ACCEPTABLE VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception of the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities (p.p.v.) in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 9**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 9 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.2 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 9: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: *Transportation Related Earthborne Vibrations.* Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans, or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-f]).
Would the project:

a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Generate excessive groundborne vibration or groundborne noise levels?

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

NOISE LEVEL INCREASE CRITERIA FOR LONG-TERM PROJECT-RELATED NOISE LEVEL INCREASES

The California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it “increases substantially the ambient noise levels for adjoining areas.” Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project-noise conditions. **Table 10** is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it is widely accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 10: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON)

Based on the **Table 10** data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the **Table 10** criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance. It is noted that General Plan Policy 9.G.6 formally adopts this methodology for evaluating traffic noise increases.

Temporary Construction Noise Impacts

With temporary noise impacts (construction), identification of “substantial increases” depends upon the duration of the impact, the temporal daily nature of the impact, and the absolute change in decibel levels. The City of Wheatland Municipal Code establishes acceptable hours of construction as 7:00 a.m. to 10:00 p.m. on weekdays.

The City has not adopted any formal standard for evaluating temporary construction noise which occurs within allowable hours. For short-term noise associated with Project construction, Saxelby Acoustics recommends use of the Caltrans increase criteria of 12 dBA (Caltrans Traffic Noise Protocol, 2020), applied to existing residential receptors in the project vicinity. This level of increase is approximately equivalent to a doubling of sound energy and has been the standard of significance for Caltrans projects at the state level for many years. Application of this standard to construction activities is considered reasonable considering the temporary nature of construction activities.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

IMPACT 1: WOULD THE PROJECT GENERATE A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES?

Traffic Noise Increases

As discussed, the substantial increase criteria range between +1.5 dBA to +5 dBA, depending on the existing noise levels. Under the proposed project, the maximum increase in traffic noise at the nearest sensitive receptor is predicted to be 1.2 dBA as shown in **Tables 3 and 4**. Therefore, impacts resulting from increased traffic noise would be considered ***less-than-significant***.

Operational Noise Increases

The proposed single-family subdivision would include typical residential noise which would be compatible with the existing adjacent residential uses.

This is a ***less-than-significant*** impact, and no mitigation is required.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. As indicated in **Table 5**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. The great majority of the building construction would occur at distances of 50 feet or greater from the nearest residences, and at distances where construction noise would not be perceptible. Construction noise associated with streets would be similar to noise that would be associated with public works projects, such as roadway widening or paving projects. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. The City of Wheatland Municipal Code establishes acceptable hours of construction as 7:00 a.m. to 10:00 p.m. on weekdays.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would likely occur primarily during daytime hours.

Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels; Saxelby Acoustics used this criterion to evaluate increases due to construction noise associated with the project. As shown in **Table 5**, construction equipment is predicted to generate noise levels of up to 90 dBA L_{max} at 50 feet. Construction noise is evaluated as occurring at the center of the site to represent average noise levels generated over the duration of construction across the project site. The nearest noise-sensitive receptors are located approximately 760 feet from the center of Unit 1. At this distance, construction noise would be approximately 66 dBA L_{max}. Based upon the noise monitoring conducted at site LT-2, existing maximum noise levels were found to be 77 dBA L_{max}. Therefore, typical construction noise levels are not expected to exceed ambient noise levels.

Although construction activities are temporary in nature and would occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting from noise levels temporarily exceeding the threshold of significance due to construction would be considered ***potentially significant***. Mitigation measure 1(a) would reduce construction noise impacts to ***less-than-significant***.

Mitigation Measure

1(a) The City shall establish the following as conditions of approval for any permit that results in the use of construction equipment:

- Construction activities should be in compliance with the City of Wheatland Municipal Code regarding hours of operation.
- Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- When not in use, motorized construction equipment shall not be left idling for more than 5 minutes.
- Stationary equipment (power generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses or sufficiently shielded to reduce noise-related impacts.

Timing/Implementation: Implemented prior to approval of grading and/or building permits
Enforcement/Monitoring: City of Wheatland Community Development Services Department

Implementation of mitigation measures 1(a) would help to reduce construction-generated noise levels. With mitigation, this impact would be considered ***less-than-significant***.

IMPACT 2: WOULD THE PROJECT GENERATE EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 6** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

IMPACT 3: **FOR A PROJECT LOCATED WITHIN THE VICINITY OF A PRIVATE AIRSTRIP OR AN AIRPORT LAND USE PLAN OR, WHERE SUCH A PLAN HAS NOT BEEN ADOPTED, WITHIN TWO MILES OF A PUBLIC AIRPORT OR PUBLIC USE AIRPORT, WOULD THE PROJECT EXPOSE PEOPLE RESIDING OR WORKING IN THE PROJECT AREA TO EXCESSIVE NOISE LEVELS?**

There are no airports within two miles of the project site. Therefore, this impact is not applicable to the proposed project.

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don’t exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

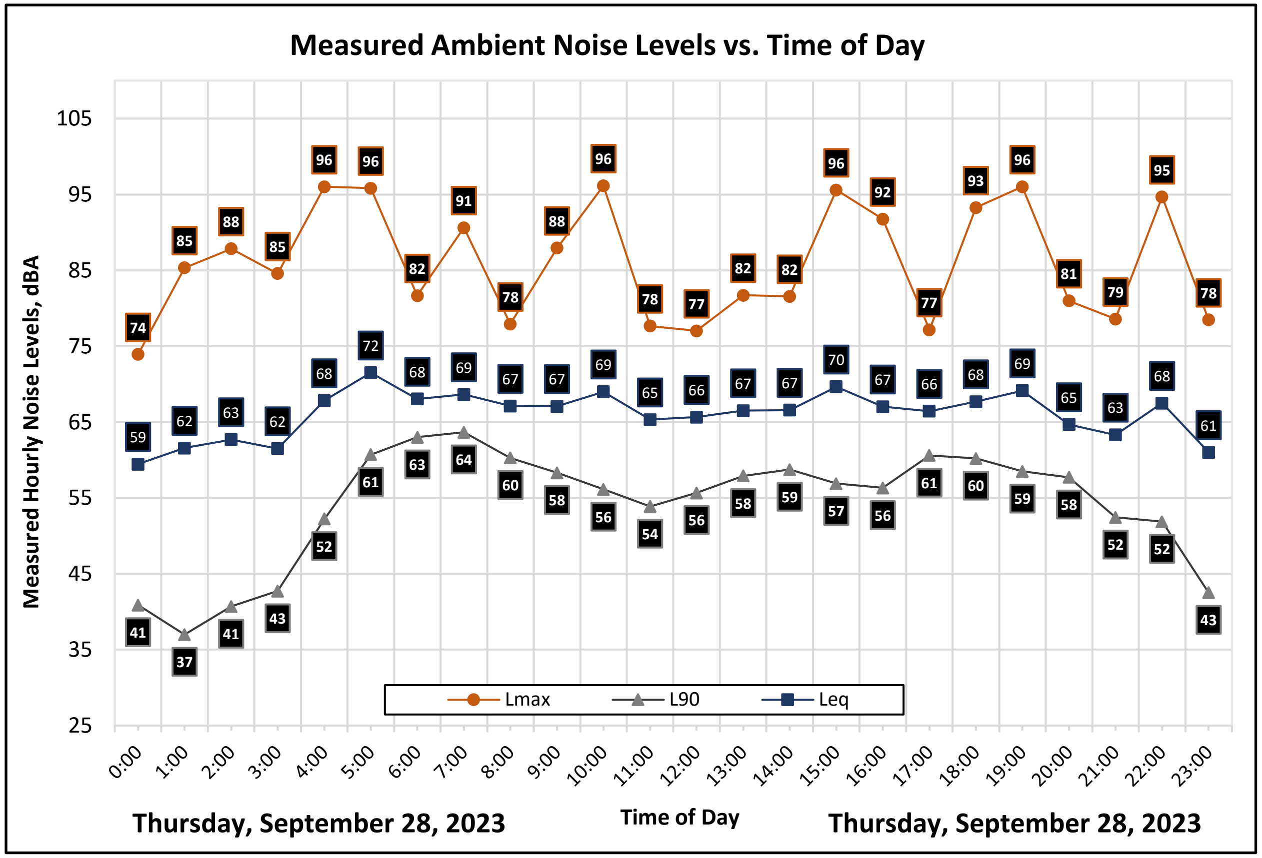
Appendix B: Continuous and Short-Term Ambient Noise Measurement Results

Appendix B1: Continuous Noise Monitoring Results

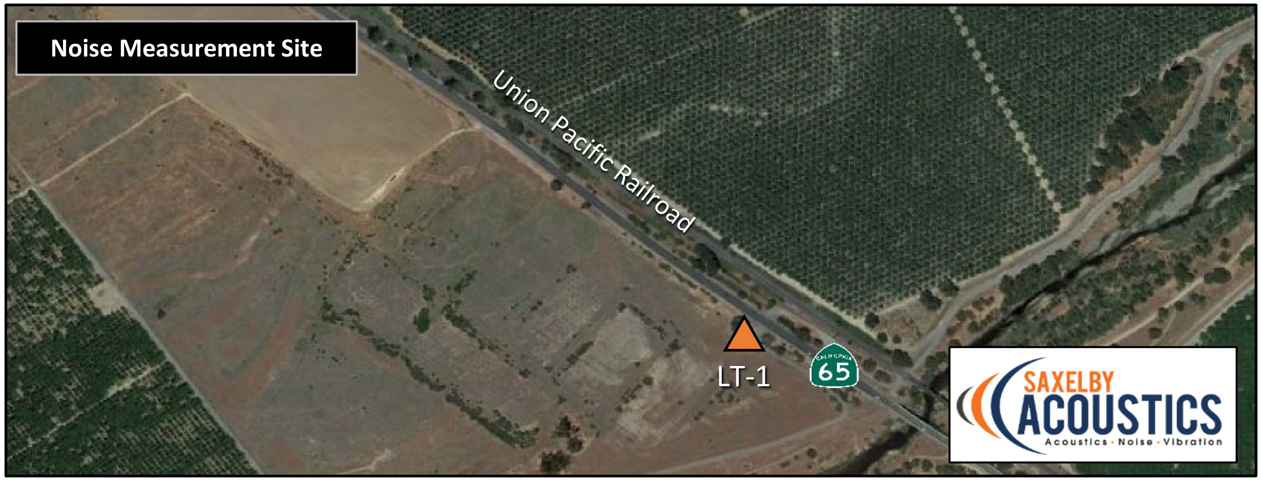
Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Thursday, September 28, 2023	0:00	59	74	55	41
Thursday, September 28, 2023	1:00	62	85	52	37
Thursday, September 28, 2023	2:00	63	88	55	41
Thursday, September 28, 2023	3:00	62	85	57	43
Thursday, September 28, 2023	4:00	68	96	62	52
Thursday, September 28, 2023	5:00	72	96	66	61
Thursday, September 28, 2023	6:00	68	82	67	63
Thursday, September 28, 2023	7:00	69	91	67	64
Thursday, September 28, 2023	8:00	67	78	66	60
Thursday, September 28, 2023	9:00	67	88	65	58
Thursday, September 28, 2023	10:00	69	96	64	56
Thursday, September 28, 2023	11:00	65	78	63	54
Thursday, September 28, 2023	12:00	66	77	64	56
Thursday, September 28, 2023	13:00	67	82	65	58
Thursday, September 28, 2023	14:00	67	82	65	59
Thursday, September 28, 2023	15:00	70	96	64	57
Thursday, September 28, 2023	16:00	67	92	64	56
Thursday, September 28, 2023	17:00	66	77	66	61
Thursday, September 28, 2023	18:00	68	93	65	60
Thursday, September 28, 2023	19:00	69	96	65	59
Thursday, September 28, 2023	20:00	65	81	63	58
Thursday, September 28, 2023	21:00	63	79	62	52
Thursday, September 28, 2023	22:00	68	95	60	52
Thursday, September 28, 2023	23:00	61	78	58	43

Statistics	Leq	Lmax	L50	L90
Day Average	67	86	65	58
Night Average	66	86	59	48
Day Low	63	77	62	52
Day High	70	96	67	64
Night Low	59	74	52	37
Night High	72	96	67	63
Ldn	72	Day %		70
CNEL	73	Night %		30

Site:	LT-1		
Project:	Heritage Oaks Estates Wheatland	**Meter:**	LDL 820-3
Location:	Southeastern Project Boundary	**Calibrator:**	CAL200
Coordinates:	(39.0009704, -121.4090059)		



Measured Ambient Noise Levels vs. Time of Day



Appendix B2: Continuous Noise Monitoring Results

Site: LT-2

Project: Heritage Oaks Estates Wheatland

Location: Northern Project Boundary

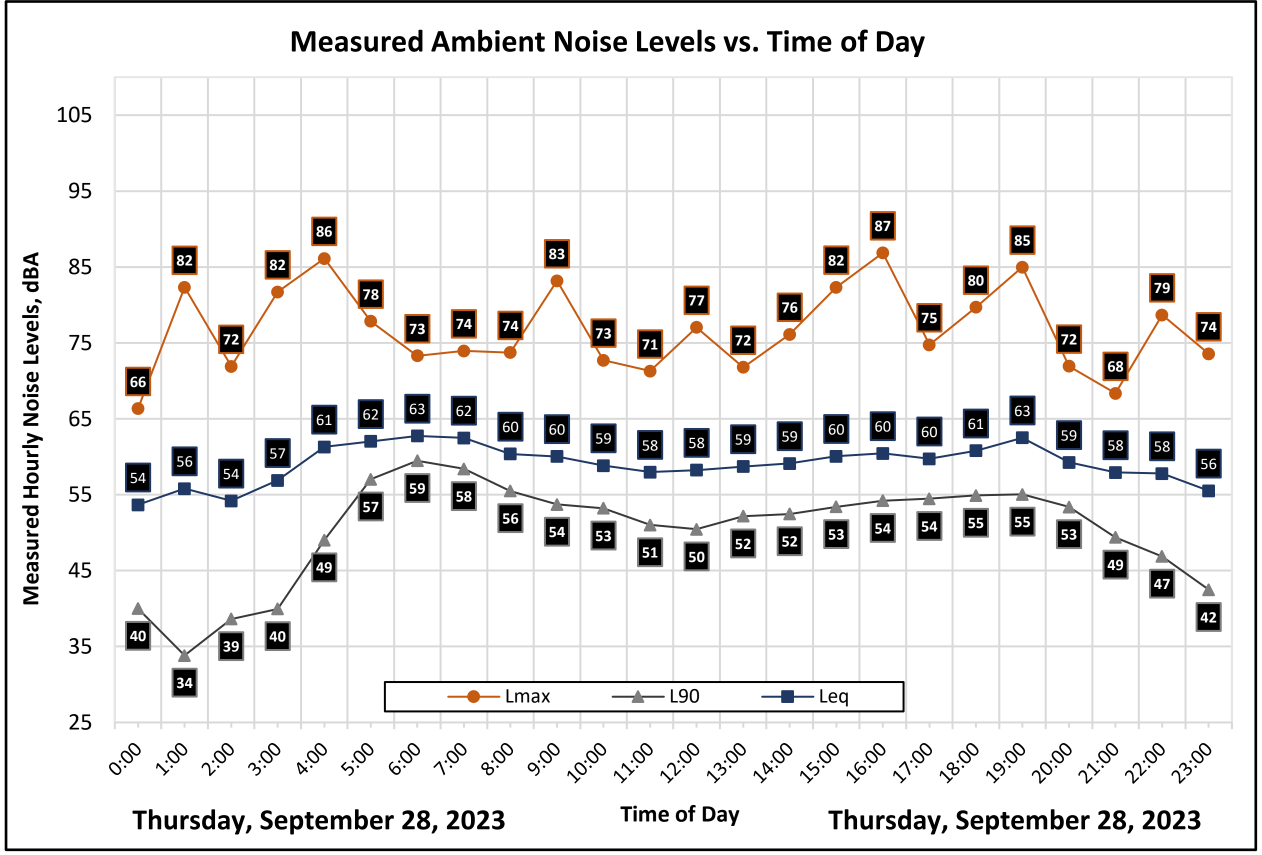
Coordinates: (39.0079162, -121.4231009)

Meter: LDL 820-1

Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Thursday, September 28, 2023	0:00	54	66	50	40
Thursday, September 28, 2023	1:00	56	82	47	34
Thursday, September 28, 2023	2:00	54	72	50	39
Thursday, September 28, 2023	3:00	57	82	52	40
Thursday, September 28, 2023	4:00	61	86	57	49
Thursday, September 28, 2023	5:00	62	78	61	57
Thursday, September 28, 2023	6:00	63	73	62	59
Thursday, September 28, 2023	7:00	62	74	62	58
Thursday, September 28, 2023	8:00	60	74	60	56
Thursday, September 28, 2023	9:00	60	83	59	54
Thursday, September 28, 2023	10:00	59	73	58	53
Thursday, September 28, 2023	11:00	58	71	56	51
Thursday, September 28, 2023	12:00	58	77	57	50
Thursday, September 28, 2023	13:00	59	72	57	52
Thursday, September 28, 2023	14:00	59	76	58	52
Thursday, September 28, 2023	15:00	60	82	58	53
Thursday, September 28, 2023	16:00	60	87	58	54
Thursday, September 28, 2023	17:00	60	75	59	54
Thursday, September 28, 2023	18:00	61	80	59	55
Thursday, September 28, 2023	19:00	63	85	59	55
Thursday, September 28, 2023	20:00	59	72	58	53
Thursday, September 28, 2023	21:00	58	68	57	49
Thursday, September 28, 2023	22:00	58	79	55	47
Thursday, September 28, 2023	23:00	56	74	53	42

Statistics	Leq	Lmax	L50	L90
Day Average	60	77	58	53
Night Average	59	77	54	45
Day Low	58	68	56	49
Day High	63	87	62	58
Night Low	54	66	47	34
Night High	63	86	62	59
Ldn	65	Day %		70
CNEL	66	Night %		30



Measured Ambient Noise Levels vs. Time of Day

Appendix B3 : Short Term Noise Monitoring Results

Site: ST-1
Project: Heritage Oaks Estates East Wheatland
Location: West of the Project Site
Coordinates: (39.0022589, -121.4188291)
Meter: LDL 831-2
Calibrator: CAL200

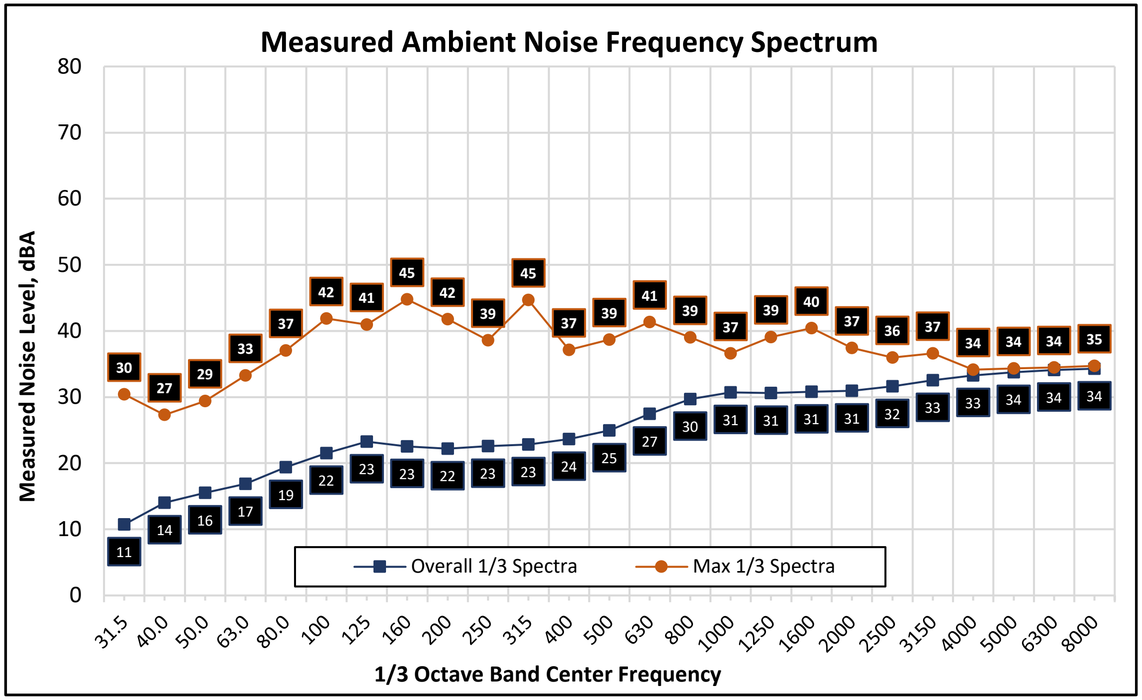
Start: 2023-09-27 09:49:10
Stop: 2023-09-27 10:05:05
SLM: Model 831
Serial: 3141

Measurement Results, dBA

Duration:	0:14
L_{eq}:	37
L_{max}:	53
L_{min}:	34
L_{50}:	36
L_{90}:	35

Notes

Primary noise source was distant traffic noise from State Route 65 and natural sounds such as birds and insects.



Noise Measurement Site

Appendix B4 : Short Term Noise Monitoring Results

Site: ST-2
Project: Heritage Oaks Estates East Wheatland
Location: South of the Project Site
Coordinates: (38.9988773, -121.4159112)
Meter: LDL 831-2
Calibrator: CAL200

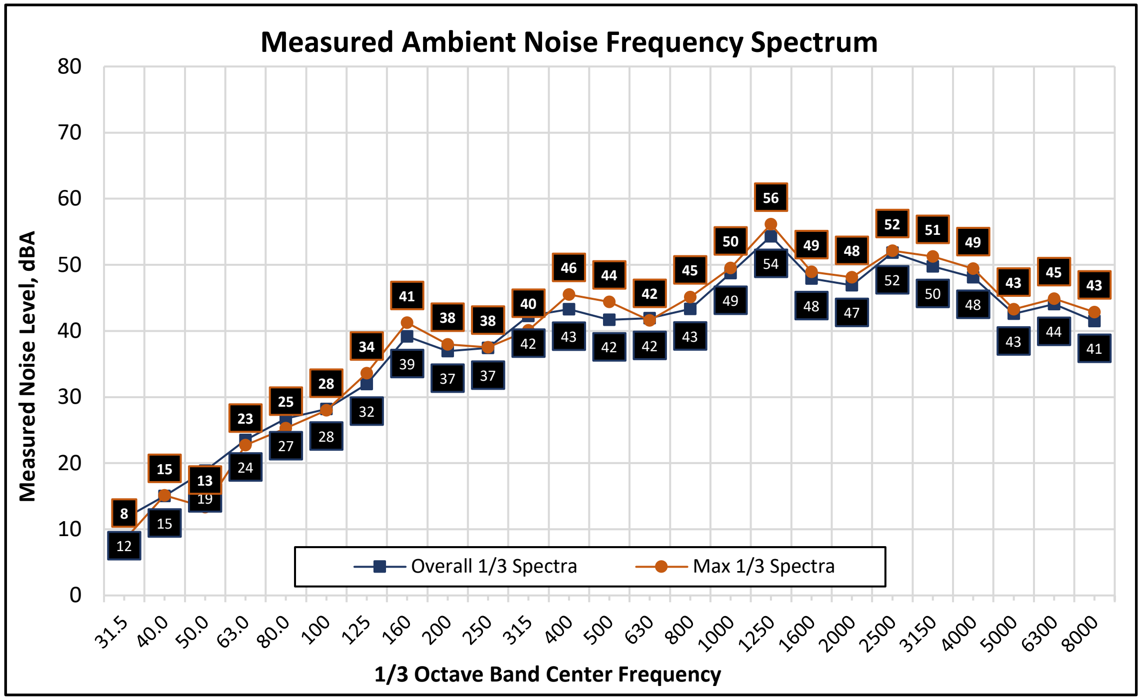
Start: 2023-09-27 10:10:47
Stop: 2023-09-27 10:20:48
SLM: Model 831
Serial: 3141

Measurement Results, dBA

Duration:	0:10
L_{eq}:	60
L_{max}:	61
L_{min}:	59
L_{50}:	60
L_{90}:	59

Notes

Primary noise source was City of Wheatland Wastewater Treatment. Secondary noise sources include nature sounds, such as insects and birds.



Appendix E

Traffic Impact Study

Heritage Oaks Estate East
City of Wheatland, CA

June 2024

TJKM

Traffic Impact Study

Heritage Oaks Estate East

City of Wheatland, California

Submitted November 16, 2023

Revised April 30, 2024

Revised June 14, 2024

TJKM

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EXECUTIVE SUMMARY

This report summarizes the results of a Traffic Impact Study (TIS) that was conducted for the proposed Heritage Oaks Estates East (Project) along State Route (SR) 65, in the southern section of the City of Wheatland (City), California.

This TIS uses methodologies that are consistent with State and City of Wheatland guidelines and standards. This document was prepared in accordance with best professional practices and standards that assess the impacts of a proposed development on the transportation system, and as appropriate, recommends improvements to lessen or negate those impacts. Transportation analyses, as presented in this TIS, involve the evaluation of existing and anticipated future roadway conditions, including with and without the proposed development, and recommend transportation improvements to offset both the impacts of the increase in future traffic volumes and the changes in traffic operations due to the development. The analysis herein is intended to assists public officials and developers to balance interrelations between efficient traffic movements with necessary lane access.

Project Overview

The Project would be a greenfield development of 681[1] single-family housing units and would occupy 148.70 acres of open space on the south side of the City west of SR 65. The Project site would be accessible via two proposed intersections along SR 65.

The purpose of this TIS is to evaluate the impacts on the transportation infrastructure due to the addition of the traffic from the proposed Project. The report includes a vehicle miles traveled (VMT) analysis, intersection level of service (LOS) capacity analyses of key intersections and segments, and evaluations and recommendations concerning Project site access and on-site circulation for vehicles, bicycles, and pedestrians.

To evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed Project, eight study intersections were identified with input from City staff and evaluated during the weekday morning (a.m.) peak hour and weekday afternoon (p.m.) peak hour under six study scenarios. The study intersections were evaluated under the following scenarios:

- 2023 Existing Conditions, without and with the Heritage Oaks Estates East development;
- 2040 Cumulative Conditions, without and with the Heritage Oaks Estates East development; and
- 2040 Cumulative Conditions with the SR 65 Realignment, without and with the Heritage Oaks Estates East development.

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[1] For the purposes of this analysis, a maximum of 685 units were analyzed to be conservative as the unit size may slightly increase.

Project Trip Summary

Using the methodology presented in the Institute of Transportation Engineers' (ITE) Trip Generation Manual (TGM), 11th Edition, the proposed development is expected to generate approximately 5,926 vehicular trips during a typical weekday, including 429 a.m. peak hour trips (107 inbound, 322 outbound) and 606 p.m. peak hour trips (382 inbound, 224 outbound).

Vehicle Miles Traveled Summary

Since the City of Wheatland has not formally adopted its own VMT standards, TJKM followed guidance from the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA*, published in December 2018. As the Project would generate 110 daily trips or more, it is not screened out from a VMT analysis according to the OPR criteria. The Heritage Oaks East development is expected to have **significant impacts on VMT and would require mitigations**. TJKM suggests three mitigation strategies and one additional strategy to reduce impacts. With these mitigation strategies, TJKM expects that the Project would have a **less-than-significant** impact on VMT.

Level of Service Summary

In line with City of Wheatland guidelines and standards, this TIS considers both intersection and segment operating conditions of level of service (LOS) "D" or better to be acceptable.

2023 Existing Conditions

Intersection LOS

Four out of six of the existing study intersections operate below jurisdictional thresholds during at least one of the peak hours. These include:

- 2) SR 65 & 2nd Street (during both a.m. and p.m. peak hours)
- 4) SR 65 & 4th Street (during the p.m. peak hour)
- 5) SR 65 & Main Street (during the p.m. peak hour)
- 6) SR 65 & State Street (during both a.m. and p.m. peak hours)

Segment LOS

Four out of six of the existing study segments operate below jurisdictional thresholds. These include:

- 1) SR 65, north of Levee Road
- 2) SR 65, south of State Street
- 3) SR 65, south of Main Street
- 4) SR 65, north of 1st Street

2023 Existing Conditions plus Project

Intersection LOS

With the proposed Project, the four existing study intersections (that operated below jurisdictional thresholds during at least one of the peak hours under 2023 Existing Conditions) would continue to deteriorate with added traffic to the road network. SR 65 & 1st Street (Study Intersection 1) would begin to operate at unacceptable levels of service during both peak hours. SR 65 & 4th Street (Study Intersection 4) and SR 65 & Main Street (Study Intersection 5) would additionally see a deterioration occur during the a.m. peak hour.

As discussed later in this Executive Summary, to mitigate inconsistencies, TJKM recommends that the proposed Project include a series of mitigation measures. With these measures, the study intersections are expected to operate similar to or better than 2023 Existing Conditions.

Segment LOS

Analysis segments are expected to operate similarly to the 2023 Existing Conditions scenario.

2040 Cumulative Conditions

Intersection LOS

Five out of the six existing study intersections operate below jurisdictional thresholds during at least one of the peak hours. These include:

- 1) SR 65 & 1st Street (during both a.m. and p.m. peak hours)
- 2) SR 65 & 2nd Street (during both a.m. and p.m. peak hours)
- 4) SR 65 & 4th Street (during the p.m. peak hour)
- 5) SR 65 & Main Street (during the p.m. peak hour)
- 6) SR 65 & State Street (during both a.m. and p.m. peak hours)

Segment LOS

Analysis segments are expected to operate similarly to the 2023 Existing Conditions scenario.

2040 Cumulative Conditions plus Project

Intersection LOS

With the proposed project, the five existing study intersections (that operated below jurisdictional thresholds during at least one of the peak hours under 2040 Cumulative Conditions) would continue to deteriorate with added traffic to the road network. SR 65 & 4th Street (Study Intersection 4) and SR 65 & Main Street (Study Intersection 5) would also see a deterioration occur during the a.m. peak hour.

As discussed later in this Executive Summary, to mitigate inconsistencies, TJKM recommends the project included a series of mitigation measures. With these measures, the study intersections are expected to operate similar to or better than 2040 Cumulative Conditions.

Segment LOS

Analysis segments are expected to operate similarly to the 2023 Existing Conditions scenario.

2040 Cumulative Conditions with the SR 65 Realignment

Intersection LOS

The SR 65 Realignment would reduce peak hour volumes along the existing SR 65 and improve traffic operations at the study intersections. That said, three out of six of the existing study intersections are expected to continue to operate below jurisdictional thresholds:

- 4) SR 65 & 4th Street (during the p.m. peak hour)
- 5) SR 65 & Main Street (during the p.m. peak hour)
- 6) SR 65 & State Street (during the p.m. peak hour)

Segment LOS

The SR 65 Realignment would reduce average daily volumes along the existing SR 65 and improve segment LOS conditions within the City. All study segments are anticipated to operate within jurisdictional standards.

2040 Cumulative Conditions with the SR 65 Realignment plus Project

Intersection LOS

With the proposed Project, the three existing study intersections (that operated below jurisdictional thresholds during at least one of the peak hours under 2040 Cumulative Conditions with the SR 65 Realignment) would continue to deteriorate with added traffic to the road network.

As discussed later in this Executive Summary, to mitigate inconsistencies, TJKM recommends the Project included a series of mitigation measures. With these measures, the study intersections are expected to operate similar to or better than 2040 Cumulative Conditions with the SR 65 Realignment.

Segment LOS

Compared to 2040 Cumulative Conditions with the SR 65 Realignment, the addition of Project traffic would deteriorate two of the six segments back to LOS "E/F". These segments are SR 65, South of Main Street (Segment 3) and SR 65, North of 1st Street (Segment 4).

Compared to 2023 Existing Conditions, the two aforementioned segments would operate at similar LOS designations but with substantially less daily volume (approximately 7,100 less trips per day per segment).

Additional Transportation Analyses Summary

Pedestrian Impacts

The proposed Project would not result in any conflicts with applicable or adopted policies, plans, or programs related to pedestrian facilities. The proposed Project would not decrease the performance or safety of existing pedestrian facilities. Thus, the proposed Project would not result in any such conflicts; therefore, the impact to pedestrian facilities is expected to be **less-than-significant**.

Bicycle Impacts

The proposed Project would not result in any conflicts or inconsistencies with existing bicycle facilities or with adopted bicycle system plans, policies, or programs related to bicycle facilities. The proposed Project would not decrease the performance or safety of bicycle facilities. Thus, the proposed Project would not result in any such conflicts; therefore, the impact to bicycle facilities is expected to be **less-than-significant**.

Transit Impacts

As the proposed Project would not conflict with a program, plan, ordinance or policy regarding existing or planned transit facilities, the impact to transit facilities is expected to be **less-than-significant**.

Nevertheless, the proposed Project could increase transit demand within the City of Wheatland along with several other residential projects in the pipeline. This may necessitate the need to increase in overall transit frequency beyond that currently provided, as described in Section 3.4.

It is suggested that the proposed Project coordinate with the City of Wheatland and bus service providers as development in Wheatland occurs to possibly reroute existing bus services closer to the Project site, to increase transit frequencies, and to implement bus stop facilities (e.g., bus shelters, bus turnouts, or center median stops) east of the Project site along SR 65. These improvements would allow potential increased transit demand from the proposed Project to be accommodated.

Site Access Management

Two full-movement access points are proposed along existing SR-65 with the proposed Project. Both are recommended for signalization and are adequately spaced from one another. Turn lanes will be constructed to along SR 65 to reduce vehicle conflicts and speed differentials. Vehicular access management impacts of the proposed Project are considered to be **less-than-significant**.

Internal Circulation

Since the proposed Project would provide adequate access to all proposed lots and facilities in the development site, and since the proposed Project would not have negative effects on access to existing lots or facilities within the City, the proposed Project's impacts on internal circulation would be **less-than-significant**.

Parking

The Project would need to provide 1,370 off-street parking stalls for the proposed 685 residential units in order to provide adequate parking facilities that are **consistent** with the City's standards.

Recommendations

The following are recommended to mitigate Project impacts:

Vehicle Miles Traveled (VMT) Reduction

- Improve the pedestrian network by providing concrete sidewalks within the Project site and to connections with other areas of the City;
- Implement traffic calming and low-stress bicycle facilities to encourage active transportation and to induce lower vehicle speeds within the Project site and to connections with other areas of the City;
- Implement community-based travel planning to encourage households and residents to use alternative modes of transportation to the single-occupancy vehicle through provision of information, incentives, and support;
- **(Optional Suggestion)** Increasing transit frequency to accommodate increased transit demand from the Project and to induce greater transit ridership with better quality service.

Transit Improvements (Suggestion)

- TJKM recommends that the proposed Project coordinate with the City of Wheatland and bus service providers to reroute existing bus services closer to the Project site, to increase transit frequencies, and to implement bus stop facilities (e.g., bus shelters, bus turnouts, and/or center median stops) east of the Project site along SR 65. These improvements would allow increased transit demand from the proposed Project to be accommodated. This would also help reduce VMT impacts as noted above.

Intersection Improvements

- 1) SR 65 & 1st Street
    - Adjust signal timings.
- 4) SR 65 & 4th Street
    - Signalize Intersection
    - Protect northbound-left and southbound-left movements
- 5) SR 65 & Main Street
    - Adjust signal timings.
- 7) SR 65 & Red Oak Drive (Site Entrance)
    - Signalize Intersection.
    - Provide turn lanes.
- 8) SR 65 & Devalentine Parkway (Site Entrance)
    - Signalize Intersection.
    - Provide turn lanes.

1.0 INTRODUCTION

This report summarizes the results of a Traffic Impact Study (TIS) that was conducted for the proposed Heritage Oaks Estates East (Project) east of SR 65 in the southern portion of the City of Wheatland (City), California. The Project would be a greenfield development of 681[2] single-family homes and would occupy 148.70 acres of open space. The Project site would be accessible via two proposed intersections along SR 65.

This chapter discusses the TIS purpose, the Project study area, and the scenarios analyzed. **Figure 1** shows the Project study area and the Project site location. **Figure 2** shows the Project's site plan.

1.1 Study Purpose

The purpose of this report is to provide summaries of changes in vehicle miles traveled (VMT) and traffic impacts on the surrounding roadway network as a result of the proposed Project. The VMT analysis is based on the methodology outlined in the OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018). An LOS analysis was conducted to determine the proposed Project's impacts on the surrounding roadway network and consistency with the City of Wheatland's and Yuba County's plans and standards.

1.2 Study Locations

1.2.1 Study Intersections

TJKM evaluated traffic conditions at eight study intersections (six existing and two future) during the weekday morning (a.m.) and weekday afternoon (p.m.) peak hours. The study intersections were selected based on TJKM's working knowledge of the area and with input and approval from the City of Wheatland.

The peak periods observed were 7–9 a.m. and 4–6 p.m. The study intersections and their corresponding traffic controls are listed below:

1. SR 65 & 1st Street (Signalized)
2. SR 65 & 2nd Street (Two-way Stop Control)
3. SR 65 & 3rd Street (Two-way Stop Control)
4. SR 65 & 4th Street (Two-way Stop Control)
5. SR 65 & Main Street (Signalized)
6. SR 65 & State Street (One-way Stop Control)
7. SR 65 & Red Oak Drive (Proposed)
8. SR 65 & Devalentine Parkway (Proposed)

Figure 1 shows the location of the study intersections.

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[2] For the purposes of this analysis, a maximum of 685 units were analyzed in lieu of 681 units to be conservative as the unit size may slightly increase.

1.2.2 Study Segments

Based on discussions with the City of Wheatland, TJKM collected bi-directional average daily traffic (ADT) volumes along the following segments:

1. SR 65, south of Bear River
2. SR 65, south of State Street
3. SR 65, City limits to Main Street
4. SR 65, north of 1st Street
5. Main Street, between Malone Avenue and SR 65
6. Main Street, between SR 65 and State Street

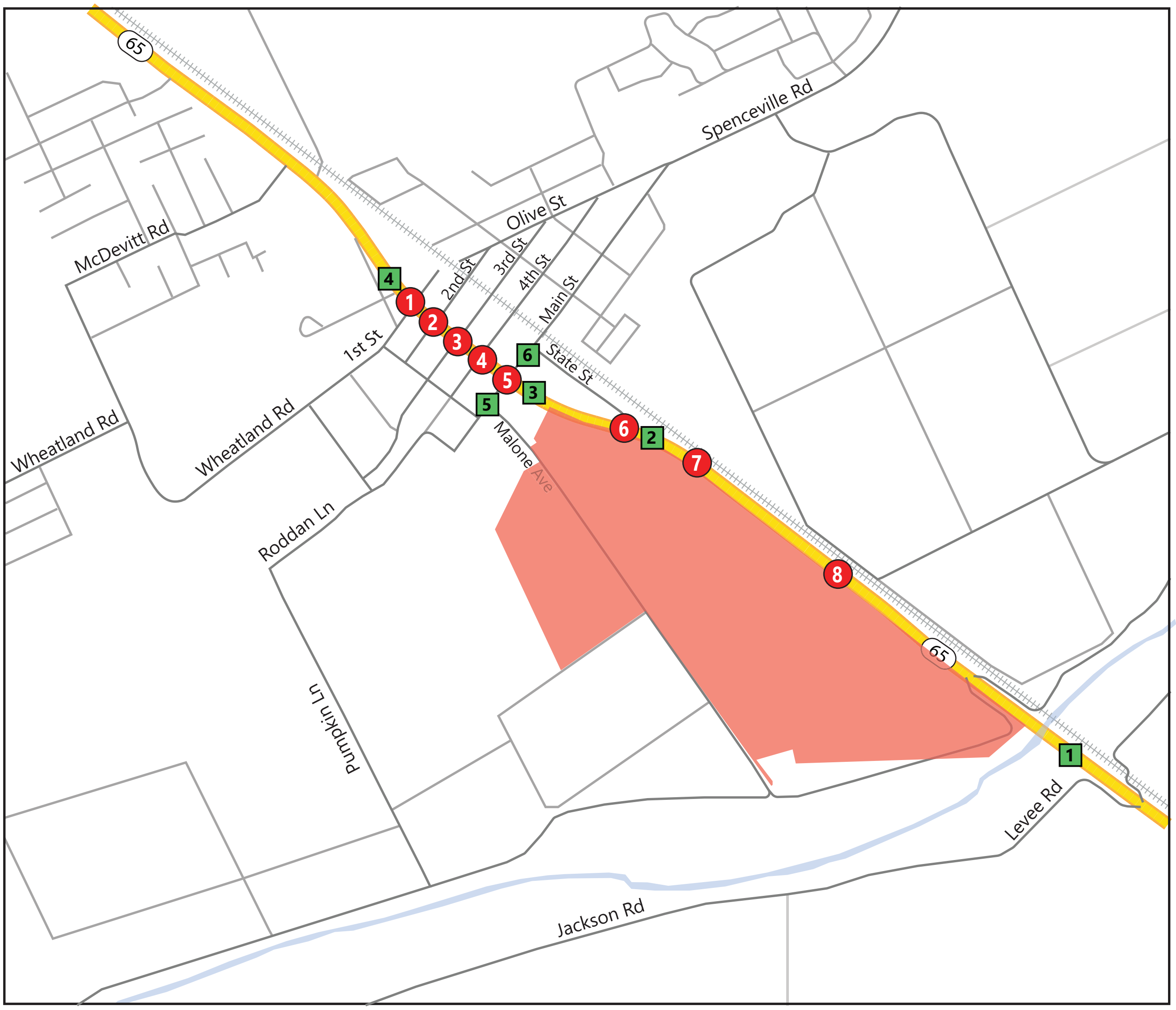
Figure 1 shows the location of the study segments.

1.3 Study Scenarios

The roadway network operations within the Project study area were analyzed under the following scenarios:

1. **2023 Existing Conditions** – This scenario evaluates the study locations based on existing traffic volumes, lane geometry, and traffic controls.
2. **2023 Existing Conditions plus Project** – This scenario is identical to 2023 Existing Conditions but with the addition of traffic from the proposed Project.
3. **2040 Cumulative Conditions** – This scenario considers the development of the City and surrounding communities to the year 2040, projecting existing 2023 traffic volumes to the year 2040 using a compounding annual growth rate of approximately 0.27 percent per year. This growth rate was derived from the Sacramento Council of Governments Activity Based Travel Demand Model.
4. **2040 Cumulative Conditions plus Project** – This scenario is identical to 2040 Cumulative Conditions but with the addition of traffic from the proposed Project.
5. **2040 Cumulative Conditions with the SR 65 Realignment** – This scenario is identical to the 2040 Cumulative Conditions but with the redistribution of traffic from the proposed SR 65 Realignment.
6. **2040 Cumulative Conditions with the SR 65 Realignment and plus Project** – This scenario is identical to the 2040 Cumulative Conditions with the SR 65 Realignment but with the addition of traffic from the proposed Project.

Figure 1: Vicinity Map



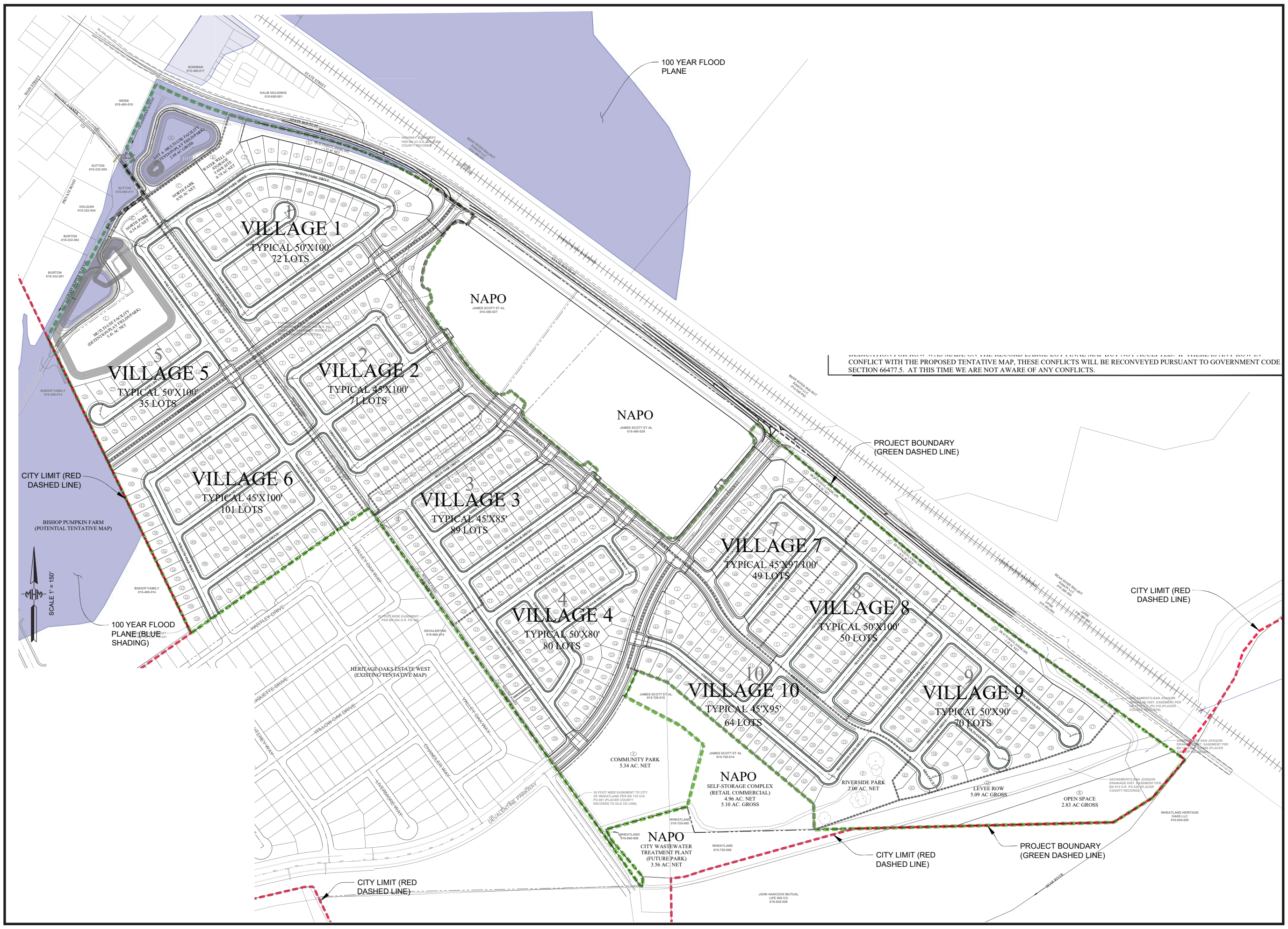
LEGEND

🟥 Project Site

Ⓧ Study Intersection

☒ Study Segment

Figure 2: Site Map



2.0 STUDY METHODOLOGY

Traffic impacts related to the proposed Project were evaluated for both compliance with applicable regulatory documents and environmental significance as defined in the California Environmental Quality Act (CEQA). In accordance with the Technical Advisory published by OPR, a quantitative Vehicle Miles Traveled (VMT) assessment forms the basis of the CEQA analysis for the proposed project. Effective as of July 1, 2020, intersection Level of Service (LOS) can no longer be used to determine significant impacts for CEQA purposes. However, the CEQA guidelines do not exclude the use of LOS analyses when determining consistency with plans and standards for jurisdictions or agencies, such as with the City of Wheatland and with Yuba County.

2.1 Vehicle Miles Traveled Methodology

This study includes a quantitative analysis of VMT generated by the proposed project. California Senate Bill (SB) No. 743 is intended to reduce greenhouse gas emissions and particulates, encourage infill development and a diversity of uses instead of sprawl, and promote multi-modal transportation networks.

As the City of Wheatland has not formally adopted its own VMT standards, guidance from the OPR Technical Advisory was used.

2.1.1 VMT Screening Criteria

The adopted Guidelines include the following screening criteria for identifying projects that can be presumed to have a less-than-significant impact:

- Small projects that generate or attract fewer than 110 trips per day;
- Residential and office projects that are located in areas with low VMT;
- Affordable residential development;
- Within a Transit Priority Area, depending on applicability;
- Local Serving Retail Projects (than 50,000 square feet).

Based on the above criteria, this project is not screened out, and thus requires a full VMT analysis.

2.1.2 VMT Standards

The State of California provides lead agencies latitude in adopting standards of significance for evaluating VMT impacts associated with land use projects. As mentioned previously, the City has not established VMT thresholds, so the OPR guidance was followed. OPR mentions the following thresholds for various types of projects:

- Threshold 1: Residential Projects
    - Residential projects exceeding a level of 15 percent below the existing VMT per capita may indicate a significant transportation impact.
- Threshold 2: Office Projects

    - Commercial projects exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.
- Threshold 3: Retail Projects
    - Retail projects that show a net increase in total VMT may indicate a significant transportation impact.

2.2 Level of Service Methodology

Level of Service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The operational LOS are given letter designations from A to F, with A representing the free-flow operating conditions and F representing the severely congested flow with high delays. Typically, LOS C is considered as an ideal condition as it represents stable flow and efficient use of the transportation facility. Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets. The following sections provide detailed study methodology based on the type of intersections.

Each of the study intersections was analyzed using *Synchro*, Version 11, software using methodology presented in either the Transportation Research Board's (TRB) Highway Capacity Manual 2000 (HCM 2000) or Highway Capacity Manual, 6th Edition (HCM 6) depending on applicability. The LOS assessment under all scenarios is based on current traffic controls unless otherwise noted.

2.2.1 Signalized Intersections

The study intersections under traffic signal control are analyzed using the HCM 2000 methodology for signalized intersections described in Chapter 16. This methodology determines LOS based on average control delay per vehicle for the overall intersection during peak hour intersection operating conditions. For all signalized intersections, the HCM 2000 methodology was used in lieu of HCM 6 due to a majority of the signalized intersections having configurations or conditions that are outside the limits of the methodology (i.e., non-standard lane configurations, lead pedestrian intervals, etc.).

Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. **Table 1** summarizes the relationship between the control delay and LOS for signalized intersections. The LOS assessments under all scenarios are based on current traffic controls and signal timings unless otherwise noted.

The LOS methodology for signalized intersections is described in detail in **Appendix A**.

Table 1: Level of Service Definitions for Signalized Intersections

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: Transportation Research Board's (TRB) Highway Capacity Manual 2000

2.2.2 Unsignalized Intersections

The study intersections under one/two-way stop control (OWSC / TWSC) and all-way stop control (AWSC) are analyzed using the HCM 6 methodology described in Chapters 20 and 21, respectively. LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At one- or two-way stop-controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersections is presented for all-way stop controlled intersections.

Table 2 summarizes the relationship between delay and LOS for unsignalized intersections. The delay ranges for unsignalized intersections are lower than for signalized intersections, as drivers expect less delay at stop-controlled intersections.

The LOS methodology for unsignalized intersections is described in detail in **Appendix A**.

Table 2: Level of Service Definitions for Stop Controlled Intersections

Level of Service	Description	Control Delay Range (sec/veh)	v/c Range
A	Usually no conflicting traffic. Drivers can easily find gaps in traffic to maneuver. v/c is low.	≤ 10	≤ 1.0
B	Occasionally some delay due to conflicting traffic. Drivers can find gaps in traffic. v/c is low.	≤ 15	≤ 1.0
C	There is some noticeable delay due to conflicting traffic. Drivers are still able to find gaps in traffic.	≤ 25	≤ 1.0
D	Drivers experience delay due to less gaps in traffic to maneuver. Lane group v/c creeps closer to 1.0.	≤ 35	≤ 1.0
E	Delay approaches driver tolerance levels. Drivers will occasionally find gaps in traffic to maneuver. Lane group v/c	≤ 50	≤ 1.0
F	Delay exceed driver tolerance levels or v/c exceeds 1.0 or both.	> 50	> 1.0

Source: Transportation Research Board's (TRB) Highway Capacity Manual, 6th Edition

2.2.3 Segments

To determine segment capacity, TJKM used the LOS thresholds presented in Exhibit 16-16 ("Generalized Daily Service Volumes for Urban Street Facilities") within the TRB's HCM 6 publication (see **Table 3**). The methodology which is intended for general planning use on urban street facilities utilizes a combination of roadway characteristics to determine approximate segment LOS. These characteristics include a segment's posted speed limit, number of travel lanes, and AADT.

For the purposes of this analysis, the following assumptions were made:

- Segments with K-factors below 0.09 were assumed to use the thresholds for 0.09; segments with K-factors above 0.11 were assumed to use the thresholds for 0.11.
- Segments with D-factors below 0.55 were assumed to use the thresholds for 0.55; segments with D-factors above 0.55 were assumed to use the thresholds for 0.60.
- Segments with posted speed limits at or below 30 miles per hour (mph) were assumed to use the thresholds for 30 mph; segments above 30 mph were assumed to use the thresholds for 45 mph.

K and D factors were calculated based on observed ADT and peak hour directional volumes on each study segment.

Table 3: Generalized Daily Service Volumes for Urban Street Facilities and Segment LOS

K-Factor	D-Factor	Daily Service Volume by Lanes, LOS, and Speed (1,000 veh/day)											
		Two-Lane Streets				Four-Lane Streets				Six-Lane Streets			
		LOS B	LOS C	LOS D	LOS E	LOS B	LOS C	LOS D	LOS E	LOS B	LOS C	LOS D	LOS E
Posted Speed = 30 mph													
0.09	0.55	NA	1.7	11.8	17.8	NA	2.2	24.7	35.8	NA	2.6	38.7	54.0
	0.60	NA	1.6	10.8	16.4	NA	2.0	22.7	32.8	NA	2.4	35.6	49.5
0.10	0.55	NA	1.6	10.7	16.1	NA	2.0	22.3	32.2	NA	2.4	34.9	48.6
	0.60	NA	1.4	9.8	14.7	NA	1.8	20.4	29.5	NA	2.2	32.0	44.5
0.11	0.55	NA	1.4	9.7	14.6	NA	1.8	20.3	29.3	NA	2.1	31.7	44.1
	0.60	NA	1.3	8.9	13.4	NA	1.7	18.6	26.9	NA	2.0	29.1	40.5
Posted Speed = 45 mph													
0.09	0.55	NA	7.7	15.9	18.3	NA	16.5	33.6	36.8	NA	25.4	51.7	55.3
	0.60	NA	7.1	14.5	16.8	NA	15.1	30.8	33.7	NA	23.4	47.4	50.7
0.10	0.55	NA	7.0	14.3	16.5	NA	14.9	30.2	33.1	NA	23.0	46.5	49.7
	0.60	NA	6.4	13.1	15.1	NA	13.6	27.7	30.3	NA	21.0	42.7	45.6
0.11	0.55	NA	6.3	13.0	15.0	NA	13.5	27.5	30.1	NA	20.9	42.3	45.2
	0.60	NA	5.8	11.9	13.8	NA	12.4	25.2	27.6	NA	19.1	38.8	41.5

Source: Transportation Research Board's (TRB) Highway Capacity Manual 6th Ed.

2.2.4 Level of Service Standards

Although level of service is no longer used for identifying impacts under CEQA, level of service analysis is still used for determining consistency with adopted agency plans and standards. Where standards refer to significant environmental impacts, this analysis instead identifies these as significant inconsistencies with adopted plans.

The City of Wheatland discusses specific standards in its General Plan on page 2-4 (Policy 2.A.2):

> *The City shall develop and manage its roadway system to maintain LOS "C" or better on all roadways, except within one-quarter mile of state highways. In these areas, the City shall strive to maintain LOS "D" or better.*

The Yuba County 2030 General Plan contains the following language:

> *Policy CD16.4 On State highways, the level of service goals included in the adopted Yuba-Sutter Congestion Management Plan shall be maintained, as feasible.*

The Sacramento Area Council of Governments' (SACOG) 2020 Congestion Management Process Update was reviewed and contained no LOS standards.

Thus, as all study intersections and study segments are within one-quarter mile of SR 65, a threshold of inconsistency of LOS D will be used. For the purposes of this analysis, operating conditions at study intersections and study segments will be considered inconsistent with City of Wheatland plans and standards if traffic impacts specific to the proposed Project cause LOS to fall below LOS D.

Additionally, unsignalized intersections would not be considered impacted unless they also meet the California Manual on Uniform Traffic Control Devices (2014 Ed.) (CA MUTCD) peak hour signal warrant (Warrant 3).

3.0 2023 EXISTING CONDITIONS

This section describes existing conditions in the immediate project site vicinity, including roadway facilities, bicycle and pedestrian facilities, and available transit service. In addition, existing traffic volumes and operations are presented for the study intersections and segments, including the results of LOS calculations.

3.1 Existing Setting and Roadway System

Relevant roadways in the Project's vicinity are discussed below:

State Route (SR) 65 (D Street) is a two-lane northwest-southeast arterial that connects the City of Wheatland with surrounding agricultural areas as well as with nearby cities and communities such as Sheridan, Lincoln, and Yuba City. SR 65 additionally provides access to other major roadways, such as Interstate 80 and US 99. According to the City of Wheatland General Plan, SR 65 transitions into an "amenity corridor" within the downtown area and includes roadway improvements to complement its status as a highly trafficked roadway that bisects the City. The roadway generally parallels the Union Pacific Railroad (UPRR) right-of-way (ROW) and is the most direct route to travel from the north side of the City to the south side of the City. Within the City limits, SR 65 includes a two-way left-turn lane as a median, concrete sidewalks and Class II bike lanes on both sides, marked crosswalks and dedicated turn lanes at most signalized intersections, and signal control and side street stop control with other arterials and local roadways, respectively. The posted speed limit is 35 miles per hour (mph) within the City limits of Wheatland and 55 mph outside the City limits.

Main Street is a two-lane northeast-southwest arterial that connects various residential neighborhoods and commercial storefronts within the City. Main Street is designated as an "amenity corridor" by the City of Wheatland General Plan and extends from Roddan Lane in the south to Spenceville Road in the north. A dashed yellow line serves as the median for the roadway south of SR 65, while north of SR 65 a double yellow line serves as the median for the roadway. On-street parking is present on both sides. Concrete sidewalks are present on both sides intermittently. An at-grade highway-railroad crossing exists on the roadway between SR 65 and C Street. The posted speed limit is 25 mph.

1st, **2nd**, **3rd**, and **4th Streets** are two-lane northeast-southwest running local roadways that form a gridded street network along with the two-lane northwest-southeast running **A**, **B**, **C**, **D**, and **E Streets**. The aforementioned roadways form the historic downtown core of the City of Wheatland. The roadways serve neighborhood residential land uses as well as commercial land uses that cluster near the UPRR ROW and SR 65 (D Street). Within the downtown area, the roadways are intermittently lined with concrete sidewalks and have on-street parking present on both sides. The northeast-southwest running roadways have double-yellow lines that serve as medians in most locations, while the northwest-southeast running roadways have no medians. The City of Wheatland General Plan designates 4th Street from SR 65 (D Street) to Spenceville Road, B Street from Olive Street to the southern City limits, and C Street from Olive Street to 6th Street as arterial "amenity corridors." The remaining aforementioned roadways are designated as local streets. At-grade highway-railroad crossings exist on 2nd, 3rd, and 4th Streets between SR 65 (D Street) and C Street. The posted speed limits are 25 mph.

State Street is a two-lane northwest-southeast running local roadway that parallels the UPRR ROW from Main Street to SR 65. The roadway provides rural residential land uses with access to the rest of the City. The roadway has no median, and no pedestrian or bicycle facilities on either side. On-street parking is not present. The posted speed limit is 25 mph.

Malone Avenue is a two-lane northwest-southeast running local roadway that is paved from Main Street to the southern City limits approximately 440 feet south of Main Street. The roadway serves residential land uses within the City limits. Beyond the City limits, Malone Avenue continues south unpaved in unincorporated area through open space and agricultural land uses until it reaches a wastewater reclamation plant approximately 760 feet north of Bear River. No bike or pedestrian facilities are present. No on-street parking is present. There is no posted speed limit.

3.2 Existing Pedestrian Facilities

Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wider sidewalks, a mix of land uses such as residential, employment, and shopping opportunities, a limited number of conflict points with vehicle traffic, and easy access to transit facilities and services.

Pedestrian facilities consist of marked crosswalks, concrete sidewalks, pedestrian signals, and off-street paths that provide safe and convenient routes for pedestrians to access the destinations such as institutions, businesses, public transportation, and recreational facilities.

In the Project's vicinity, marked crosswalks and concrete curb cuts with tactile surfaces are respectively present at most approaches and corners of the study intersections except at the intersection of SR 65 at State Street (Study Intersection 6), which has no pedestrian facilities present. Countdown pedestrian signal heads are present at the corners of the signalized intersections of SR 65 at 1st Street (Study Intersection 1) and SR 65 at Main Street (Study Intersection 5).

Concrete sidewalks are consistently present along SR 65 on both sides from Main Street to 1st Street and intermittently present along remaining roadways on both sides in the downtown area of Wheatland. South of Main Street, concrete sidewalks are not present along SR 65.

Beyond the study intersections, marked crosswalks are occasionally present at intersection approaches and concrete sidewalks are intermittently present along roadways near the Project's vicinity.

A graphic illustrating existing pedestrian facilities is provided in **Figure 3**.

3.3 Existing Bicycle Facilities

Bicycle paths, lanes, and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following four classes:

- **Class I (Multiuse Trail)**: A completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
- **Class II (Bike Lane)**: A designated lane for the exclusive use or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited but with vehicle parking and cross-flows by pedestrians and motorists permitted.
- **Class III (Bike Route)**: A route designated by signs or pavement markings and shared with pedestrians and motorists.
- **Class IV (Separated Bikeway)**: An on-street facility reserved for use by bicyclists with physical separation between the bikeway and travel lanes. Physical separation consists or vertical elements that may include curbs, landscaping, bollards, or parking lanes.

In the Project's vicinity, Class II bike lanes exist on both sides of SR 65 from approximately 160 feet south of Main Street to the northern City limits at the intersection of SR 65 at Hooper Street.

The City of Wheatland 2014 Bikeway Master Plan proposes Class II bike lanes along the entire length of SR 65 in the City's vicinity. Class II bike lanes are also proposed along Main Street, and E Street. Class II bike lanes and a "super sidewalk" (a raised path for pedestrians and bicycles separated from vehicular lanes by landscaping) are proposed for 1st Street west of SR 65. A Class I multiuse path is proposed along Malone Avenue from Main Street to Bear River.

A graphic illustrating existing bicycle facilities is provided in **Figure 4**.

3.4 Existing Transit Facilities

Yuba-Sutter Transit is a public agency that operates fixed-route and demand response (dial-a-ride) bus services throughout Yuba County and Sutter County. Bus services are divided into local routes and rural routes. Six routes are provided locally within the Marysville/Yuba City area and operate from 6:30 a.m. to 6:30 p.m. on weekdays and from 8:30 a.m. to 5:30 p.m. on Saturdays. No service is available on Sundays.

Rural routes consist of three routes that provide a combination of advance reservation (demand response) and scheduled services. The Wheatland Route is one of the three rural routes and connects various bus stops within the City of Wheatland with Yuba City. Service is provided on weekdays. The Wheatland Route provides one inbound bus from the City of Wheatland to Yuba City in the morning, and one outbound bus from Yuba City to the City of Wheatland in the evening per day.

Table 4 shows the operating hours of the Wheatland Route. **Figure 5** shows the existing transit facilities in the City of Wheatland.

Table 4: Existing Bus Services

Route #	From	To	Weekdays		Weekend	
			Operating Hours	Headway (hours)	Operating Hours	Headway (hours)
Wheatland	Yuba County Government Center	Donner Trail Manor (121 C St.)	10:00 a.m. – 4:35 p.m.	24	-	-

Source: https://www.yubasuttertransit.com/

Figure 3: Existing Pedestrian Facilities

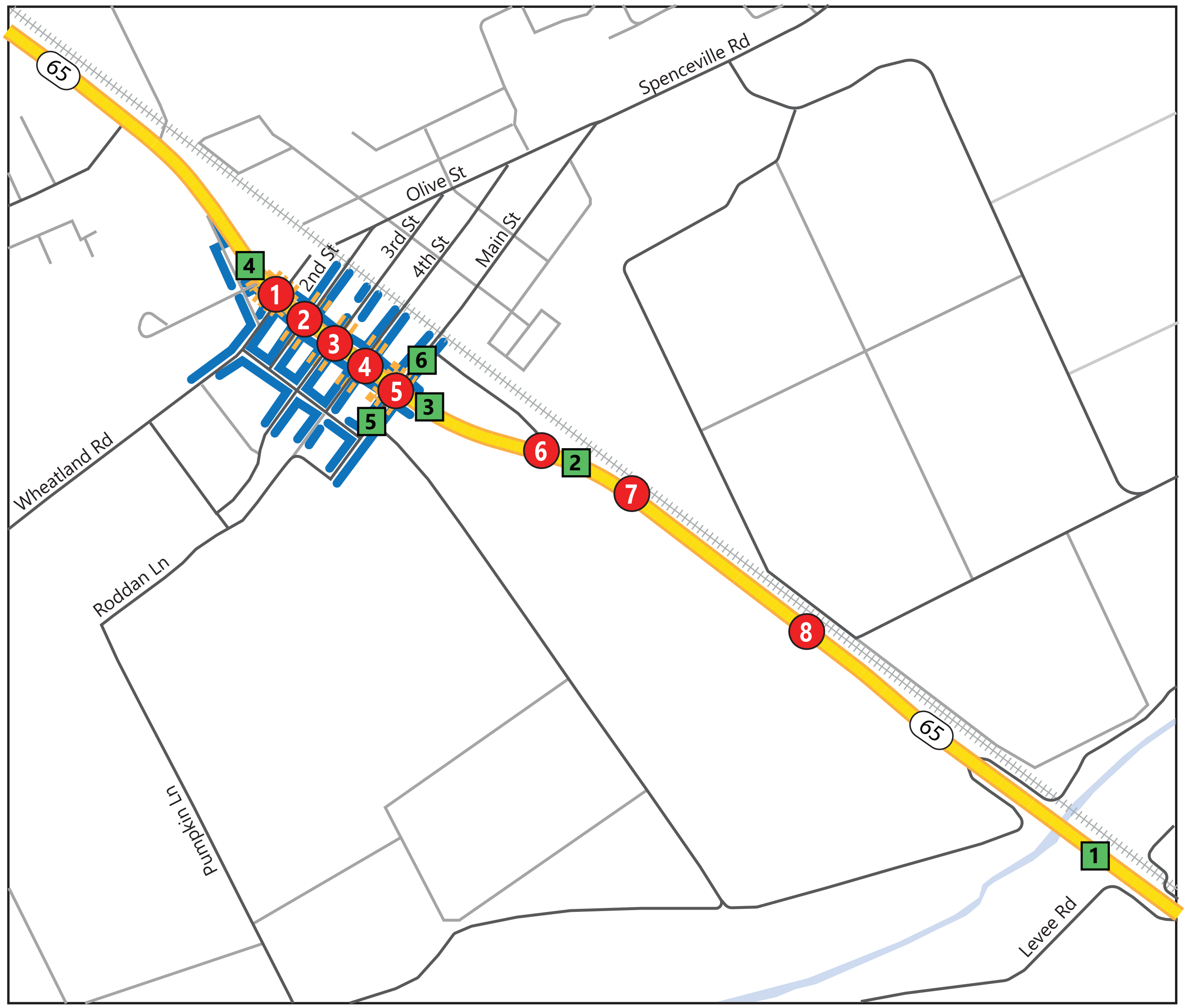


Figure 4: Existing Bicycle Facilities

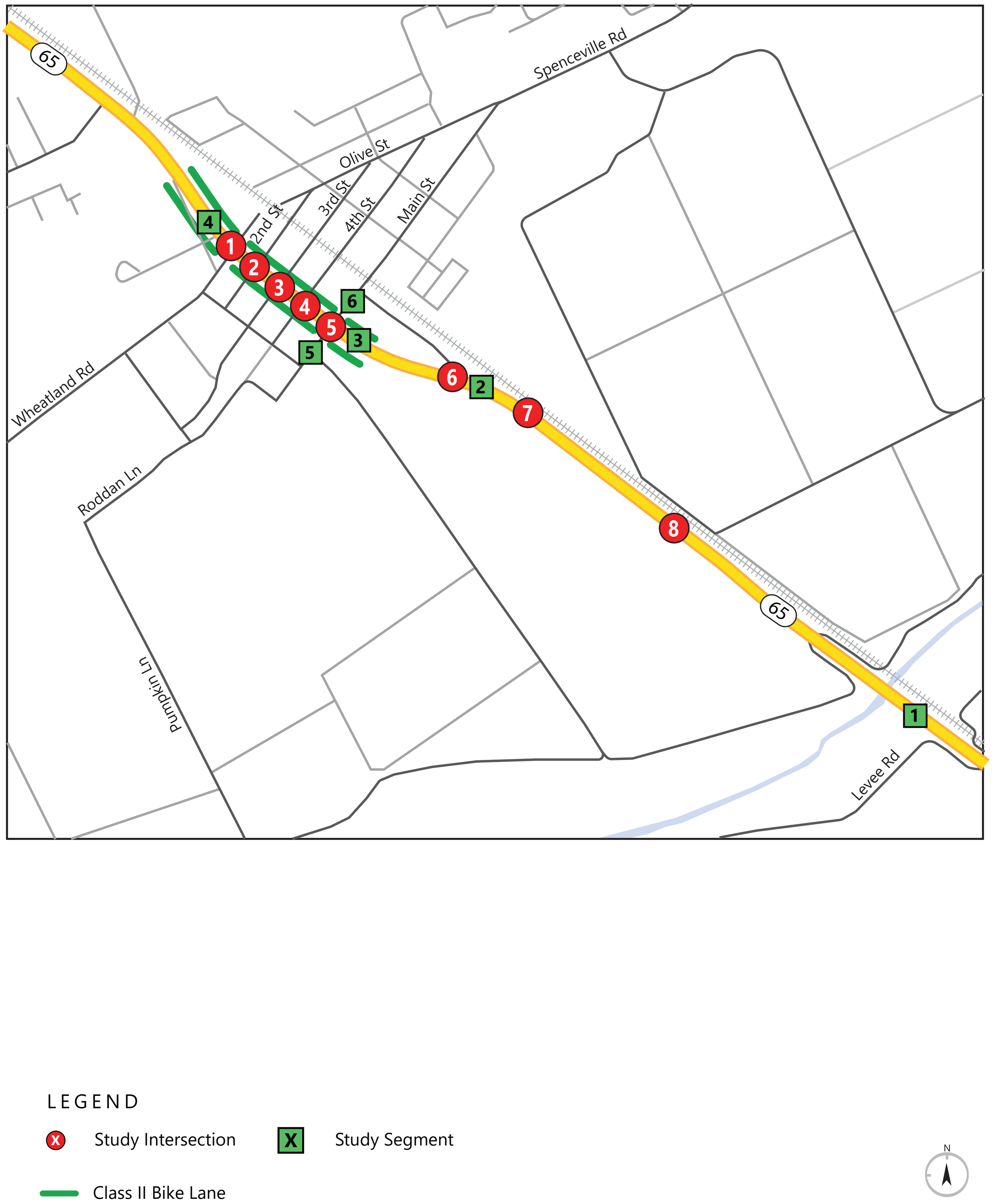
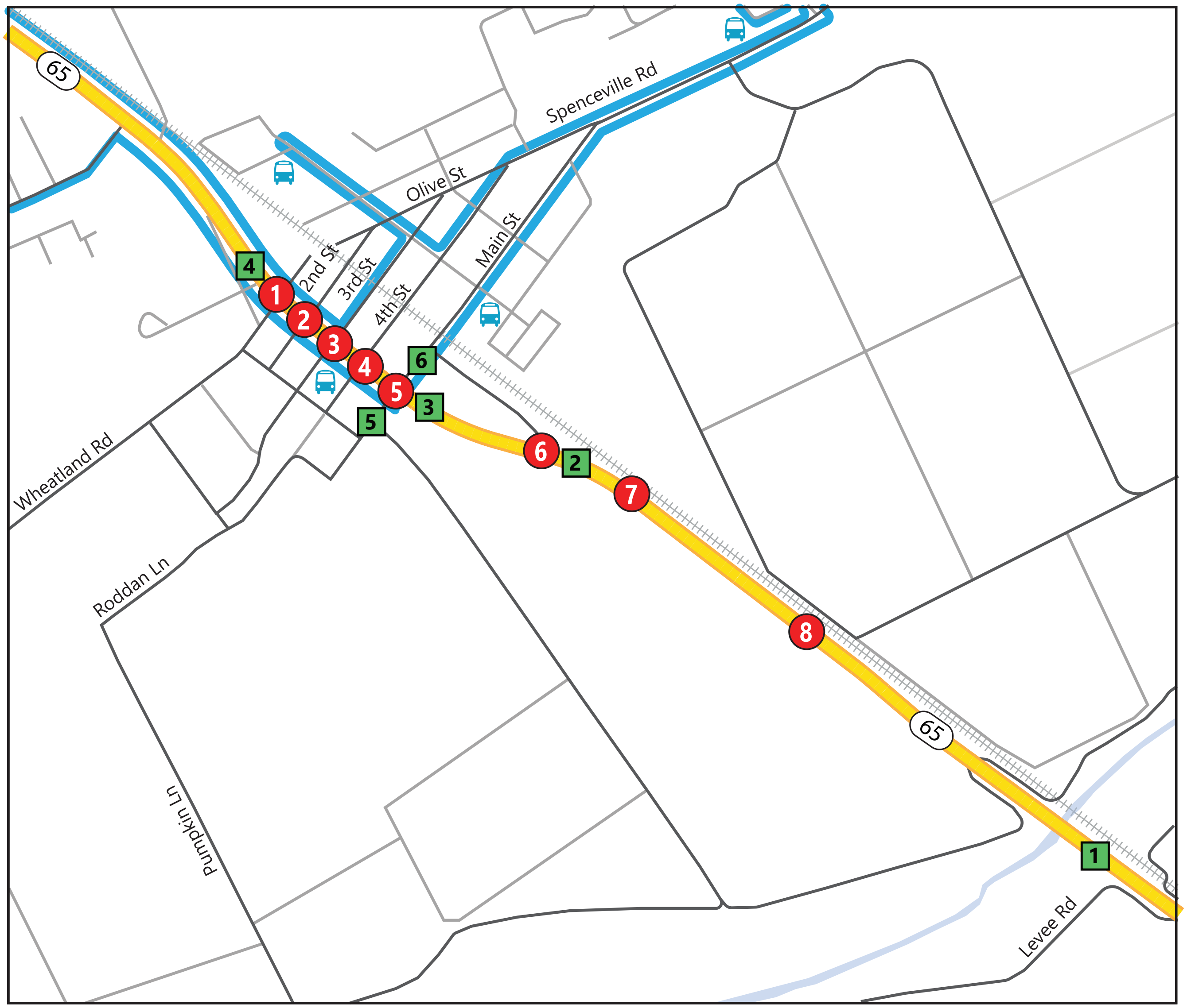


Figure 5: Existing Transit Facilities



LEGEND

- ⓧ Study Intersection
- 🟩 X Study Segment
- ━ Route 4
- 🚌 Bus Stop

3.5 Existing Traffic Volumes and Lane Configuration

In order to determine the weekday morning (a.m.) and the weekday afternoon (p.m.) turning movement traffic volumes, intersection turning movement counts (TMC) of vehicles, bicycles, and pedestrians were collected at the study intersections on Tuesday, September 12, 2023 during the weekday morning and weekday afternoon peak periods (7–9 a.m. and 4–6 p.m., respectively).

The TMC data is included in **Appendix B.**

The existing lane geometries and traffic control at each study intersection are illustrated on **Figure 6**, and intersection turning movement volumes at each study intersection are illustrated on **Figure 7**.

Vehicular volumes were also collected on Tuesday, September 12, 2023, along roadway segments near the Project site to determine the existing average daily traffic (ADT). The following roadway segments were surveyed:

1. SR 65, south of Bear River
2. SR 65, south of State Street
3. SR 65, south of Main Street
4. SR 65, north of 1st Street
5. Main Street from Malone Avenue to SR 65
6. Main Street from SR 65 to State Street

3.6 Segment Level of Service

The existing ADT and segment LOS for each segment are shown in **Table 5**. The ADT data is available in **Appendix C**.

As shown in the table below, SR 65 handles the bulk of traffic volumes in the Project's vicinity and currently operates below acceptable conditions.

Table 5: 2023 Existing Conditions ADT

No.	Corridor	Segment	Count Year	ADT	Existing LOS
1	SR 65	North of Levee Road	2023	26,509	E/F
2	SR 65	South of State Street	2023	26,165	E/F
3	SR 65	South of Main Street	2023	24,857	E/F
4	SR 65	North of 1st Street	2023	26,038	E/F
5	Main Street	Malone Avenue to SR 65	2023	1,758	C
6	Main Street	SR 65 to State Street	2023	3,855	C

Figure 6: Existing Lane Configuration

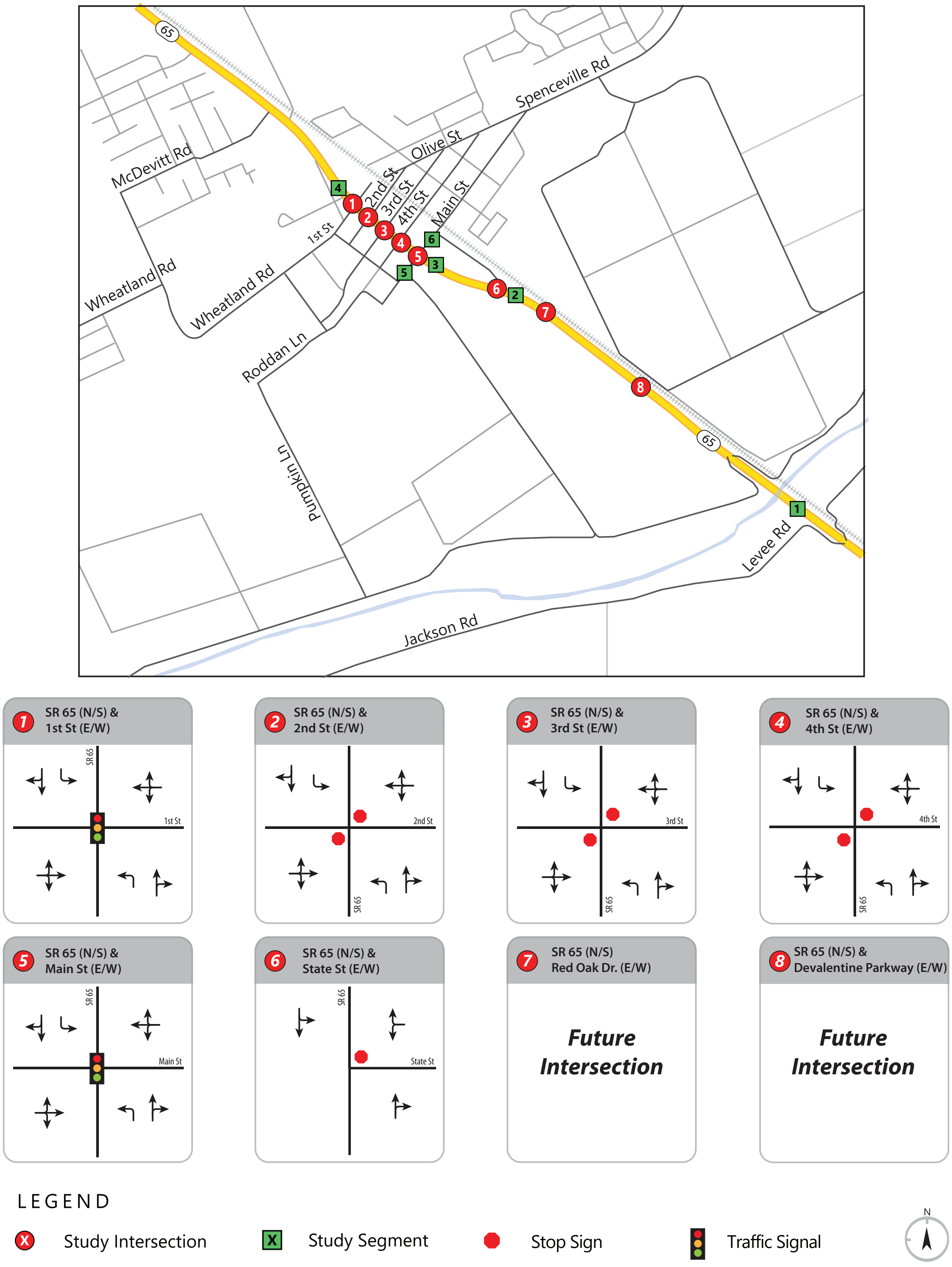
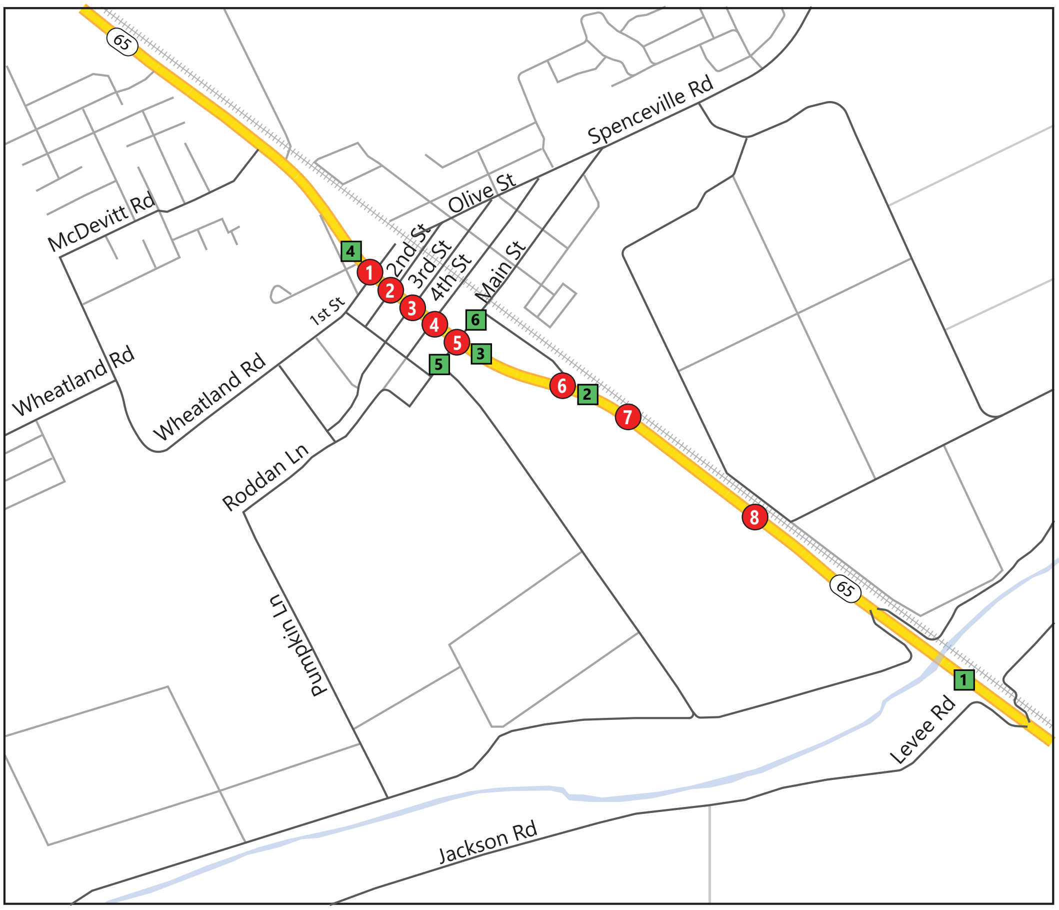
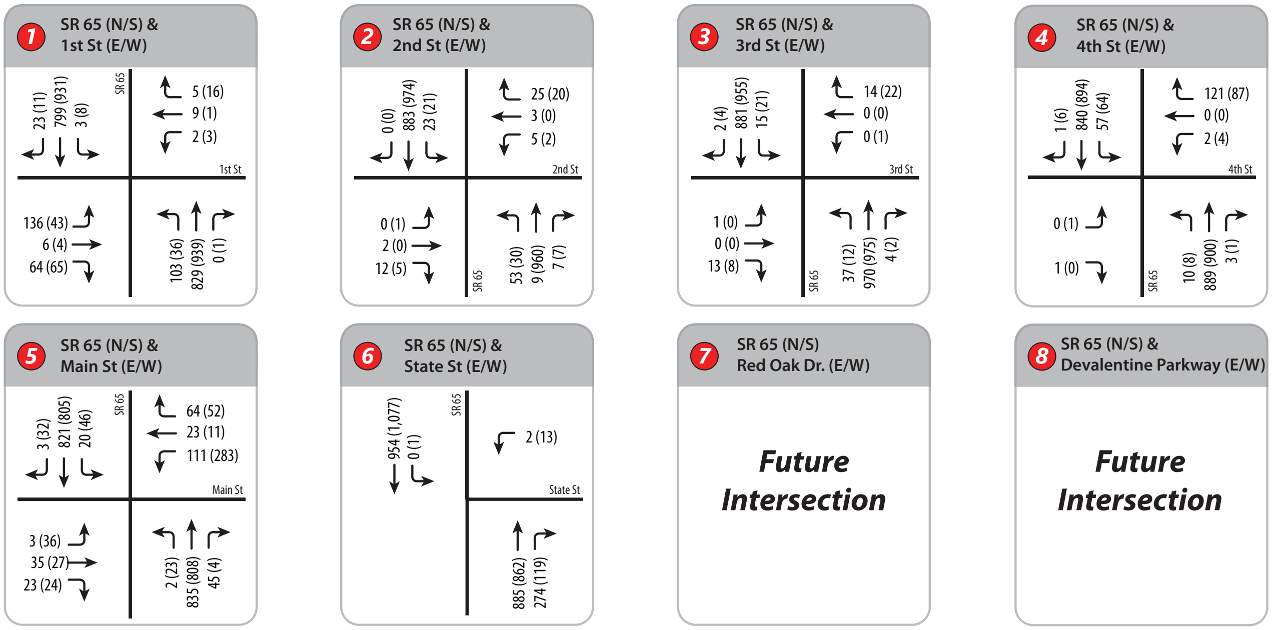


Figure 7: 2023 Existing Conditions – Intersection Peak Hour Traffic Volumes





LEGEND

🟥 X	Study Intersection
🟩 X	Study Segment
XX	AM Peak Hour Volumes
(XX)	PM Peak Hour Volumes

N

TJKM

3.7 Intersection Level of Service Analysis

Existing intersection lane configurations and turning movement volumes were used to calculate the level of service for the study intersections during each peak hour. Existing signal timings were obtained from the City and Caltrans. The results of the level of service analysis for Existing Conditions are summarized in **Table 6**. Intersections that operated at unacceptable LOS are shown in red. Detailed calculation sheets for the Existing Conditions scenario are contained in **Appendix D**.

As shown below, both SR 65 & 2nd Street (Study Intersection 2) and SR 65 & State Street (Study Intersection 6) experience unacceptable LOS during both the a.m. and p.m. peak hours, while both SR 65 & 4th Street (Study Intersection 4) and SR 65 & Main Street (Study Intersection 5) experience unacceptable LOS during the p.m. peak hour.

Table 6: 2023 Existing Conditions – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Delay (sec/veh)	LOS
1	SR 65 & 1st St.	Signal	a.m.	53.4	D
			p.m.	51.9	D
2	SR 65 & 2nd St.	TWSC	a.m.	47.6	E
			p.m.	35.3	E
3	SR 65 & 3rd St.	TWSC	a.m.	24.1	C
			p.m.	23.4	C
4	SR 65 & 4th St.	TWSC	a.m.	28.6	D
			p.m.	138.4	F
5	SR 65 & Main St.	Signal	a.m.	45.4	D
			p.m.	101.4	F
6	SR 65 & State St.	OWSC	a.m.	89.2	F
			p.m.	76.8	F
7	SR 65 & Red Oak Drive St. (Proposed)	-	a.m.	-	-
			p.m.	-	-
8	SR 65 & Devalentine Pkwy. (Proposed)	-	a.m.	-	-
			p.m.	-	-

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

Red indicates unacceptable LOS.

"-" indicates not applicable.

4.0 2023 EXISTING CONDITIONS PLUS PROJECT

This section describes the impacts of the proposed project at the study intersections and surrounding roadway system. The 2023 Existing Conditions plus Project scenario consists of existing traffic volumes and roadway facilities plus new traffic generated by the proposed Project.

This section consists of two analysis components:

- A vehicle miles traveled (VMT) assessment of the proposed project (Section 4.1), and
- A level of service (LOS) assessment of study intersections (Sections 4.2 to 4.5).

The amount of traffic added to the roadway system by the proposed development is estimated using a three-step process:

- Trip Generation (Section 4.2) – Estimates the amount of traffic added to the roadway network,
- Trip Distribution (Section 4.3)– Estimates the direction of travel to and from the project site, and
- Trip Assignment (Section 4.3) – The new trips are assigned to specific street segments and intersection turning movements.

4.1 Vehicle Miles Traveled

The VMT analysis utilized the latest Sacramento Council of Governments Activity Based Travel Demand Model (SACSIM). The Travel Analysis Zone (TAZ) in the model that the proposed Project is located in is #1368. The number of proposed single-family dwelling units (685) were added into the TAZ for the base year to see if the project creates significant VMT impacts.

As this project is not screened out from VMT analysis, two full SACSIM model runs were performed for this project in accordance OPR VMT guidelines. The first run used a base year of 2016 to analyze existing VMT per capita numbers for the City of Wheatland. The second run used a base year of 2016 run with the proposed Project housing units included.

The 2016 base year SACSIM model run yielded a VMT per capita value of **32.30** for the City of Wheatland, as shown in **Table 7**. For a development to have an insignificant impact on VMT, the VMT per capita must meet the 85 percent threshold of the City average, which is 0.85 x 32.30 = **27.45** VMT per capita.

Table 7: Existing Conditions – VMT Analysis Results

Total Residential VMT (Wheatland)	Total Population (Wheatland)	VMT/Capita (Wheatland)
138,567	4,290	32.30

The resultant home-based VMT per capita for the Project TAZ with 685 single-family dwelling units added is **30.38**, as shown in **Table 8**. Since this value is higher than the Citywide threshold by **9.6 percent**, the proposed Project would have significant impacts on VMT, and thus, would require mitigations to offset said impacts.

Table 8: Existing Conditions plus Project – VMT Analysis Results

Home-Based Residential VMT (Project TAZ)	Total Population (Project TAZ)	VMT/Capita (Project TAZ)
84,059	2,767	30.38

Mitigation measures for the proposed Project's VMT impacts are listed below[3]:

1. **Improve the pedestrian network** – This strategy focuses on creating a pedestrian network within the project and connecting to nearby destinations. Concrete sidewalk improvements count as part of this strategy and the maximum VMT reduction allowed is **6.4 percent**. The formula to calculate how much mitigation is total project pedestrian network length divided by the existing pedestrian network length, subtract that value by one and multiply by an elasticity factor of 0.05. This project contains approximately 4,500 feet of new sidewalk, and less than one foot of existing sidewalk around the project site (since it is a completely new development). Thus, the formula calculates the mitigation possible for this measure as (4,500 ft. /1 ft.) – 1 ft x -0.05 = -224.95%. However, only a maximum of 6.4% reduction is allowed for this mitigation measure.
2. **Implement traffic calming and low-stress bicycle facilities** – This strategy focuses are creating roadway networks of low vehicle speeds and volumes that are more conducive to walking and bicycling. The maximum VMT reduction allowed with this strategy is **1.5 percent**. As this project is a completely new development in an undeveloped part of Wheatland, any bike lane / bikeway improvement counts towards the VMT mitigation allowed. The project site plan shows bike lanes built on the major corridors around the project site, so a maximum of 1.5% reduction is allowed for this mitigation measure.
3. **Implement community-based travel planning** – This strategy is a residential-based approach to outreach that provides households and residents with information, incentives, and support to encourage the use of alternatives modes of transportation to single-occupancy vehicles. The maximum VMT reduction allowed with this strategy is **2.3 percent**. For this mitigation measure, the Homeowner's Association (HOA) of the project will send out newsletters and other information regarding carpooling, vanpooling, and other ride-sharing programs available for residents within the community.
4. **Optional: Increase transit frequency** – Transit demand would likely increase within the City of Wheatland in the coming years considering the proposed Project and other additional planned residential developments. This may necessitate to need to increase transit frequency beyond that currently provided, as described in Section 3.4. The maximum VMT reduction allowed with this strategy is **11.3 percent**.

---

[3] *CAPCOA – Handbook for Analyzing Greenhouse Gas Emission Reductions, Chapter 3*

The home-based VMT per capita for TAZ #1368 with the proposed Project would be reduced by a total of 10.2 percent from **30.38** to **27.43** using the first three mitigation measures discussed above. As the home-based VMT per capita with mitigation is less than the 85 percent threshold of **27.45**, the proposed Project would have **less-than-significant impacts on VMT with the proposed measures implemented**.

Of note, if Measure 4 was pursued, it alone may be sufficient to fully mitigate the Project's VMT impact.

4.2 Project Trip Generation

To estimate trips generated by the proposed development for the weekday morning (a.m.) and weekday afternoon (p.m.) peak periods, as well as for weekday daily trips, TJKM utilized the published trip generation rates from the Institute of Transportation Engineers' (ITE) Trip Generation Manual (TGM), 11th Edition, and consistent with the methodology published in ITE's Trip Generation Handbook (TGH), 3rd Edition.

TJKM utilized published trip rates from the ITE Land Use Code (LUC) 210 (Single-Family Detached Housing) to estimate the trips generated by the proposed Project's residential units. **Table 9** displays the estimated number of trips generated by the proposed Project by daily average and by peak hour. The proposed development is expected to generate approximately 5,926 vehicular trips during a typical weekday, including 429 a.m. peak hour trips (107 inbound, 322 outbound) and 606 p.m. peak hour trips (382 inbound, 224 outbound).

Of note, the analysis herein excludes the reductions due to pass-by or internal trip capture due to the lack of non-residential uses within the site.

4.3 Project Trip Distribution and Assignment

Trip distribution is a process of developing study assumptions that estimates the direction vehicular trips will arrive and depart the study site. Trip assignment estimates specific streets and turning movements at study intersections for project-related or site traffic.

Trip distribution and assignment assumptions for the proposed project were developed based on existing travel patterns, knowledge of the study area, engineering judgment, and the trip distribution for the site's original traffic study contained within the 2002 Heritage Oaks Estates Draft Environmental Impact Report.

The trip distribution for vehicles is listed below by peak hour:

- a.m. peak hour:
  - 20 percent to/from the north via SR 65
  - 25 percent to and 35 percent from the residential area north of Wheatland Elementary School via Evergreen Drive and McDevitt Drive onto SR 65
  - 5 percent to and 10 percent from the east via Main Street and Spenceville Road
  - 35 percent to and 20 percent from the south via SR 65
  - 5 percent to/from the west via Main Street, E Street, and Wheatland Road
  - 10 percent to/from the west via 1st Street and Wheatland Road
- p.m. peak hour:

  - 20 percent to/from the north via SR 65
  - 5 percent to/from the residential area north of Wheatland Elementary School via Evergreen Drive and McDevitt Drive onto SR 65
  - 15 percent to/from the east via Main Street and Spenceville Road
  - 40 percent to/from the south via SR 65
  - 10 percent to/from the west via Main Street, E Street, and Wheatland Road
  - 10 percent to/from the west via 1st Street and Wheatland Road

Figure 8 and **Figure 9** illustrate the a.m. and p.m. peak hour trip distributions, respectively. **Figure 10** shows the assignment for primary site trips. **Figure 11** displays the resulting 2023 Existing Conditions plus Project traffic volumes.

Table 9: Project Trip Generation and Comparison (ITE TGM 11th Ed.; Peak Hour of the Adjacent Street)

Land Use	ITE Code	Size		Weekday								
				Daily	a.m. Peak Hour				p.m. Peak Hour			
				Total	In:Out %	In	Out	Total	In:Out %	In	Out	Total
Single-Family Detached Housing	210	685	DU	5,926	25:75	107	322	429	63:37	382	224	606
Total				**5,926**		**107**	**322**	**429**		**382**	**224**	**606**

Notes:

1. *General: Multiple ITE land use codes (LUC) have fitted curve equations (EQ) for various analysis periods in addition to rates. The methodology in the ITE's Trip Generation Handbook (3rd Ed.) was utilized to determine which was used.*
2. *For the purposes of this analysis, a maximum of 685 units were analyzed in lieu of 681 units to be conservative as the unit size may slightly increase.*

Figure 8: Trip Distribution (AM)

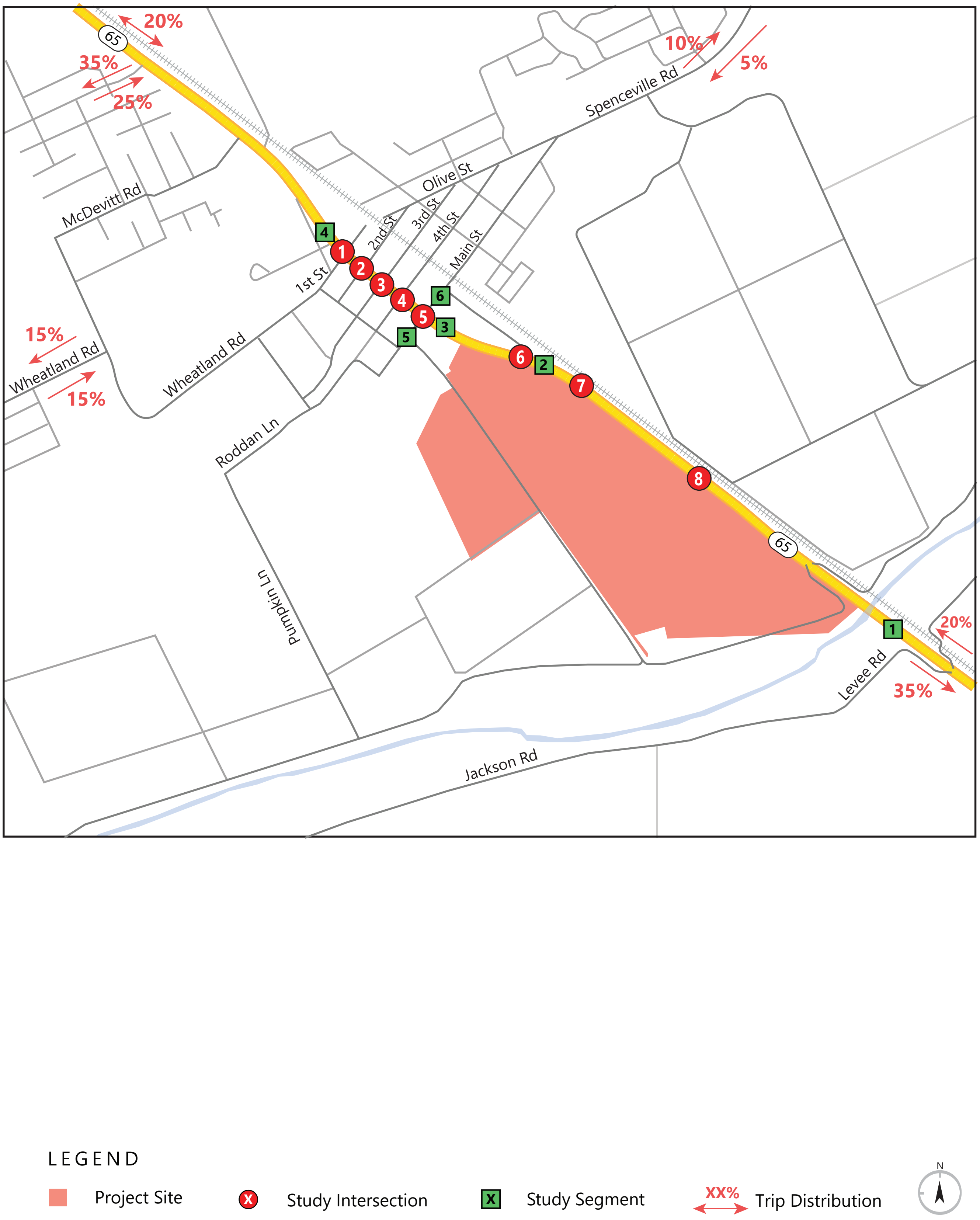


Figure 9: Trip Distribution (PM)

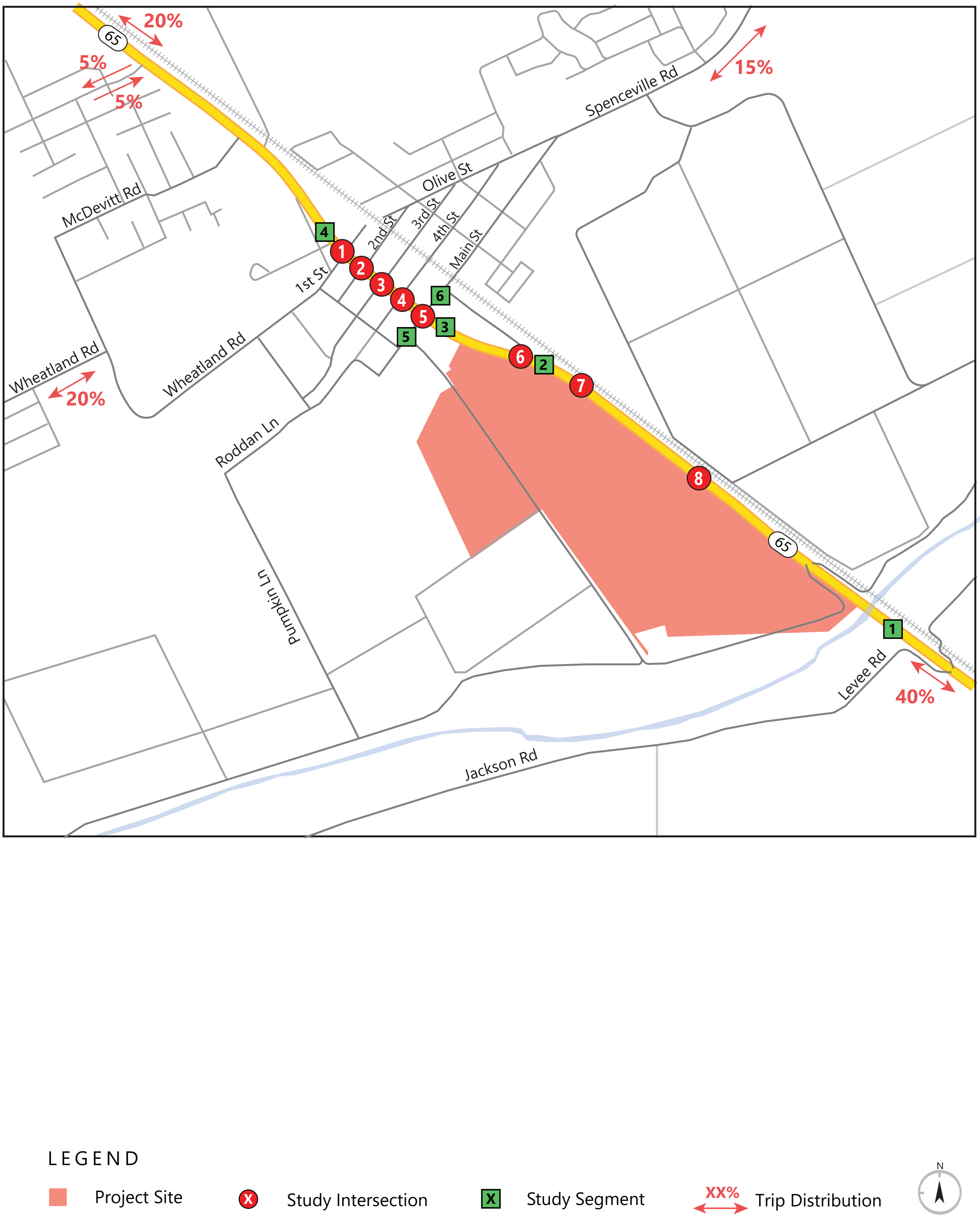
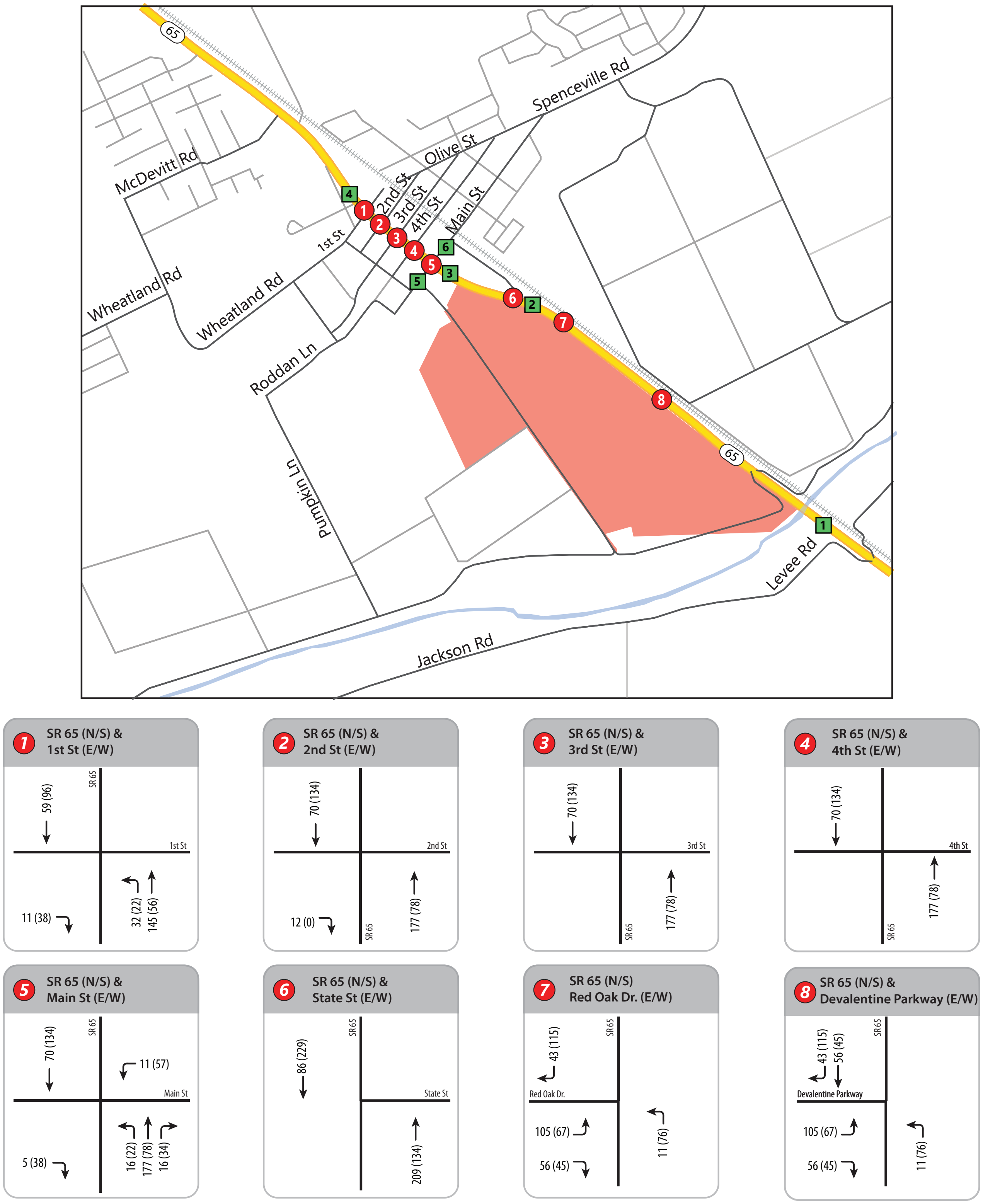


Figure 10: Trip Assignment



LEGEND

🟥 Project Site

X Study Intersection

🟩 X Study Segment

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

N

Figure 11: 2023 Existing Conditions plus Project – Intersection Peak Hour Traffic Volumes

TJKM

4.4 Segment Level of Service

The Existing plus Project ADT and segment LOS for each segment are shown in **Table 10**. Segment LOS for 2023 Existing Conditions are shown as well for comparison. Segment LOS does not change with the addition of Project traffic. Segments along SR 65 continue to operate below acceptable conditions. The ADT data is available in **Appendix C**.

Table 10: 2023 Existing Conditions plus Project ADT

No.	Corridor	Segment	2023 ADT	Existing LOS	Additional Traffic from Project	Existing plus Project ADT	Existing plus Project LOS
1	SR 65	North of Levee Road	26,509	E/F	1,779	28,288	E/F
2	SR 65	South of State Street	26,165	E/F	2,356	28,521	E/F
3	SR 65	South of Main Street	24,857	E/F	3,554	28,411	E/F
4	SR 65	North of 1st Street	26,038	E/F	1,482	27,520	E/F
5	Main Street	Malone Avenue to SR 65	1,758	C	592	2,350	C
6	Main Street	SR 65 to State Street	3,855	C	888	4,743	C

4.5 Intersection Level of Service Analysis

The intersection level of service analysis results for the 2023 Existing Conditions plus Project scenario are summarized in **Table 11**. The results for 2023 Existing Conditions are included for comparison. Intersections that operated at unacceptable thresholds are shown in red, and intersections that degraded between "No Project" conditions to "Plus Project" conditions per the applicable thresholds are likewise shown in red. Detailed calculation sheets for 2023 Existing Conditions plus Project are contained in **Appendix E**.

The table below demonstrates that operating conditions worsen at virtually all intersections with the addition of Project traffic and without any roadway improvements considered. All intersections except SR 65 & 3rd Street (Study Intersection 3) would be expected to operate at unacceptable LOS during both peak hours.

Recommended improvements are discussed in Section 4.5.1.

Table 11: 2023 Existing Conditions plus Project – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Existing Conditions		Existing plus Project Conditions		Change in Delay (sec/veh)
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
1	SR 65 & 1st St.	Signal	a.m.	53.4	D	62.3	E	+8.9
			p.m.	51.9	D	73.5	E	+21.6
2	SR 65 & 2nd St.	TWSC	a.m.	47.6	E	78.9	F	+31.3
			p.m.	35.3	E	49.0	E	+13.7
3	SR 65 & 3rd St.	TWSC	a.m.	24.1	C	30.5	D	+6.4
			p.m.	23.4	C	29.7	D	+6.3
4	SR 65 & 4th St.	TWSC	a.m.	28.6	D	45.7	E	+17.1
			p.m.	138.4	F	262.8	F	+124.4
5	SR 65 & Main St.	Signal	a.m.	45.4	D	67.7	E	+22.3
			p.m.	101.4	F	179.4	F	+78.0
6	SR 65 & State St.	OWSC	a.m.	89.2	F	150.2	F	+61.0
			p.m.	76.8	F	308.5	F	+231.7
7	SR 65 & Red Oak Drive St. (Proposed)	OWSC	a.m.	-	-	741.8	F	-
			p.m.	-	-	804.0	F	-
8	SR 65 & Devalentine Pkwy. (Proposed)	OWSC	a.m.	-	-	39.7	E	-
			p.m.	-	-	35.5	E	-

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

Red indicates unacceptable LOS.

"-" indicates not applicable.

4.5.1 Suggested Improvements

The intersections with unacceptable operating conditions were further analyzed to identify changes that would improve their conditions and reduce their delay. The improvements and their effects on intersection operating conditions are summarized in **Table 12**. Detailed calculation sheets for 2023 Existing Conditions plus Project with Mitigations are contained in **Appendix F**. The following improvements or mitigation measures are recommended:

- SR 65 & 1st Street (Study Intersection 1)
  - Mitigation measures at this intersection include signal timing adjustments. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & 2nd Street (Study Intersection 2)
  - None.
  - A signal is not warranted at the subject intersection based off the side-street volume (through and left turning volumes from the side-streets, which experience the highest stopped-delays, are expected to comprise of eight or less vehicles per peak hour per approach). If delays do start to occur, it is expected that these vehicles would utilize the City's street grid to find alternative routes with less trip-delay.
- SR 65 & 3rd Street (Study Intersection 3)
  - None.
  - Operating conditions at this intersection remain at acceptable levels and no mitigation measures are required.
- SR 65 & 4th Street (Study Intersection 4)
  - Mitigation measures at this intersection include signalization with protected northbound-left and southbound-left movements. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & Main Street (Study Intersection 5)
  - Mitigation measures at this intersection were restricted to signal timing adjustments due to right-of-way restrictions near the intersection. Although the intersection would still operate at unacceptable LOS "F," signal timing adjustments can reduce average delay to better than no project conditions. As such, all Project effects on delay are mitigated.
- SR 65 & State Street (Study Intersection 6)
  - None.
  - A signal is not warranted at the subject intersection based off the side-street volume.
  - While delays at the intersection are relatively high, improvements to reduce delays at SR 65 & Main Street (Study Intersection 5) would induce southbound vehicles that are using State Street to bypass existing congestion at SR 65 & Main Street (Study Intersection 5) to revert back to using SR 65 & Main Street (Study Intersection 5).

- SR 65 & Red Oak Drive (Study Intersection 7)
    - Mitigation measures at this intersection include signalization with optimized splits. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & Devalentine Parkway (Site Entrance; Study Intersection 8)
    - Mitigation measures at this intersection include signalization with optimized splits. The mitigation measures would reduce intersection delay to acceptable LOS.
    - Of note, current plans for the development illustrate a northbound acceleration lane for eastbound-left turning vehicles to perform a two-stage maneuver and accelerate to match speed of vehicles traveling north on SR 65. This measure would not be required with the construction of a signal.

It should be noted that signal warrant assessments were conducted for intersections based on the requirements of Warrant 2 (Four-hour Vehicular Volume) and Warrant 3 (Peak Hour) in the California Manual on Uniform Traffic Control Devices (2014 Ed.) (CA MUTCD). The operating conditions during the p.m. peak hour at SR 65 & 4th Street (Study Intersection 4) warrant signalization under Warrant 2 but not under Warrant 3. TJKM recommends that a full signal warrant assessment be conducted at each intersection before signalization.

Table 12: 2023 Existing Conditions plus Project with Mitigations – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Existing Conditions Delay (sec/veh)	Existing Conditions LOS	Existing plus Project Conditions with Mitigations Delay (sec/veh)	Existing plus Project Conditions with Mitigations LOS	Change in Delay (sec/veh)	Signal Warranted?
1	SR 65 & 1st St.	Signal	a.m.	53.4	D	41.7	D	-11.7	-
			p.m.	51.9	D	25.5	C	-26.4	-
2	SR 65 & 2nd St.	TWSC	a.m.	**47.6**	**E**	**78.9**	**F**	+31.3	No
			p.m.	**35.3**	**E**	**49.0**	**E**	+13.7	No
3	SR 65 & 3rd St.	TWSC	a.m.	24.1	C	30.5	D	+6.4	No
			p.m.	23.4	C	29.7	D	+6.3	No
4	SR 65 & 4th St.	TWSC MIT: Signal	a.m.	28.6	D	9.2	A	-19.4	**Yes**
			p.m.	**138.4**	**F**	9.5	A	-128.9	**Yes***
5	SR 65 & Main St.	Signal	a.m.	45.4	D	42.2	D	-3.2	-
			p.m.	**101.4**	**F**	**95.7**	**F**	-5.7	-
6	SR 65 & State St.	OWSC	a.m.	**89.2**	**F**	**150.2**	**F**	+61.0	No
			p.m.	**76.8**	**F**	**308.5**	**F**	+231.7	No
7	SR 65 & Red Oak Dr. (Proposed)	OWSC MIT: Signal	a.m.	-	-	9.2	A	-	**Yes**
			p.m.	-	-	21.2	C	-	No
8	SR 65 & Devalentine Pkwy. (Proposed)	OWSC MIT: Signal	a.m.	-	-	15.6	B	-	**Yes**
			p.m.	-	-	15.1	B	-	No

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

*5. *Meets Warrant 2 (Four-hour vehicular volume) but not Warrant 3 (Peak hour) in the CA MUTCD (2014 Ed.).*

Red indicates unacceptable LOS.

"-" indicates not applicable.

5.0 2040 CUMULATIVE CONDITIONS

This section discusses the effects of regional growth on the local roadway network that occurs in the period between 2023 and 2040. Of note, this scenario excludes the construction of the SR-65 by-pass; see Section 7.0 for the inclusion of the SR-65 by-pass.

5.1 Inherent Regional Growth

In order to account for increased demand on the traffic network, an inherent growth rate was applied to obtain the cumulative scenarios by peak hour. This "inherent" growth rates were applied to account for regional development within the at-large area, which would ultimately result in increased roadway demand. Furthermore, the inherent growth rates are anticipated to account for any potential background development to be constructed within the immediate vicinity of the proposed development by 2040.

According to the SACSIM, traffic volumes on the local roadway network of Wheatland were estimated to grow by 0.27 percent per year during both the a.m. and p.m. peak hours from 2016 (base year of the model) to 2035 (horizon year of the model). Thus, the annual growth rate of 0.27 percent compounds to a 4.70 percent growth factor over the 17-year study period from 2023 to 2040. The growth factor was then applied to all 2023 Existing Conditions movements at the study intersections to generate inherent regional growth volumes.

The inherent regional growth volumes (for the period between 2023 and 2040) are illustrated in **Figure 12**.

The 2023 Existing Conditions peak hour traffic volumes were combined with the inherent regional growth volumes in order to estimate the 2040 Cumulative Conditions peak hour traffic volumes, as illustrated in **Figure 13**.

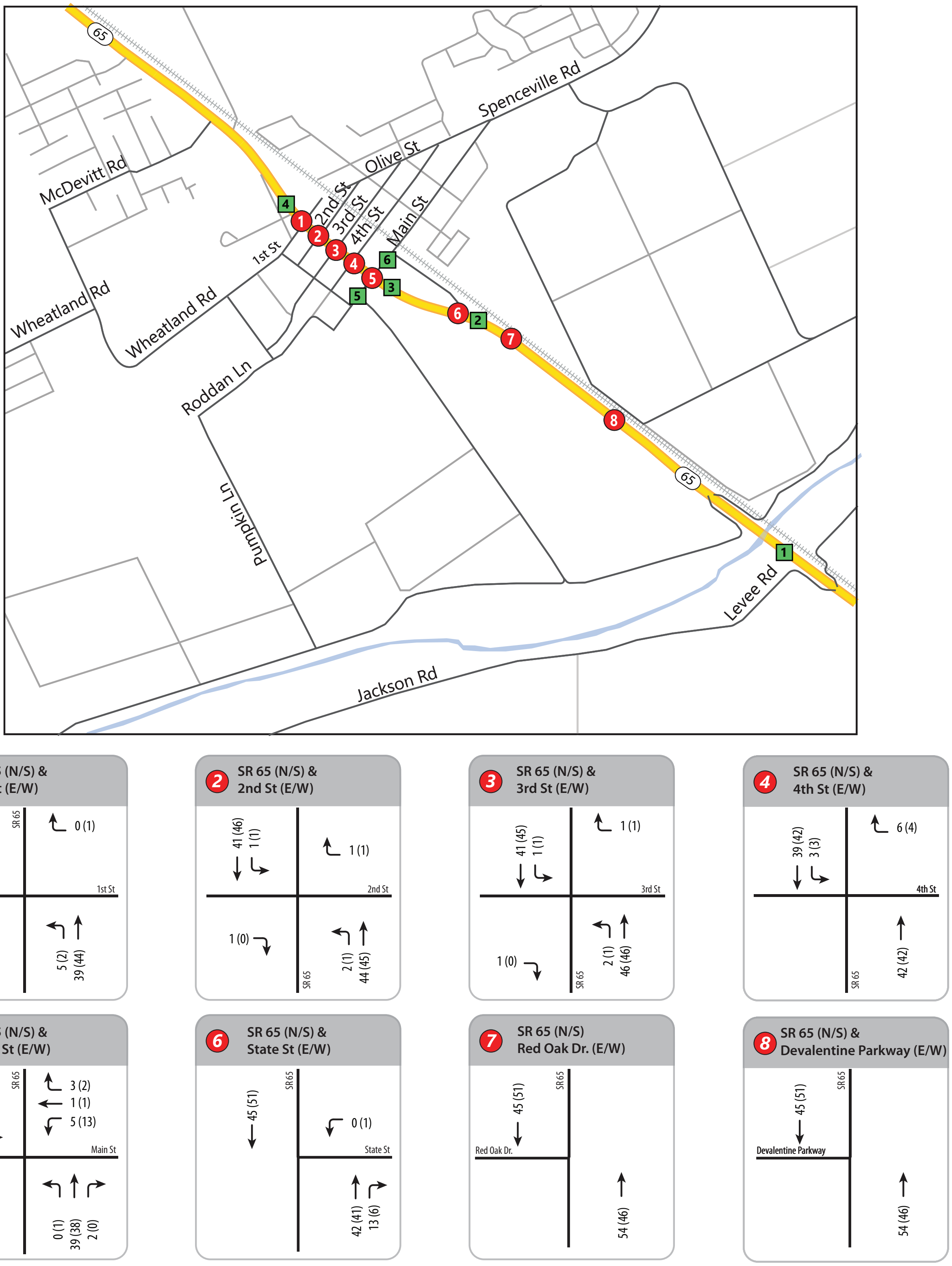
5.2 Segment Level of Service

The 2040 Cumulative Conditions ADT and segment LOS for each segment are shown in **Table 13**. Segment LOS does not change as a result of traffic from inherent growth. Segments along SR 65 continue to operate below acceptable conditions. The ADT data is available in **Appendix C**.

Table 13: 2040 Cumulative Conditions ADT

No.	Corridor	Segment	2023 ADT	Additional Traffic from Inherent Growth	2040 Cumulative ADT	2040 Cumulative LOS
1	SR 65	North of Levee Road	26,509	1,243	27,752	E/F
2	SR 65	South of State Street	26,165	1,227	27,392	E/F
3	SR 65	South of Main Street	24,857	1,166	26,023	E/F
4	SR 65	North of 1st Street	26,038	1,221	27,259	E/F
5	Main Street	Malone Avenue to SR 65	1,758	82	1,840	C
6	Main Street	SR 65 to State Street	3,855	181	4,036	C

Figure 12: Inherent Regional Growth Volumes



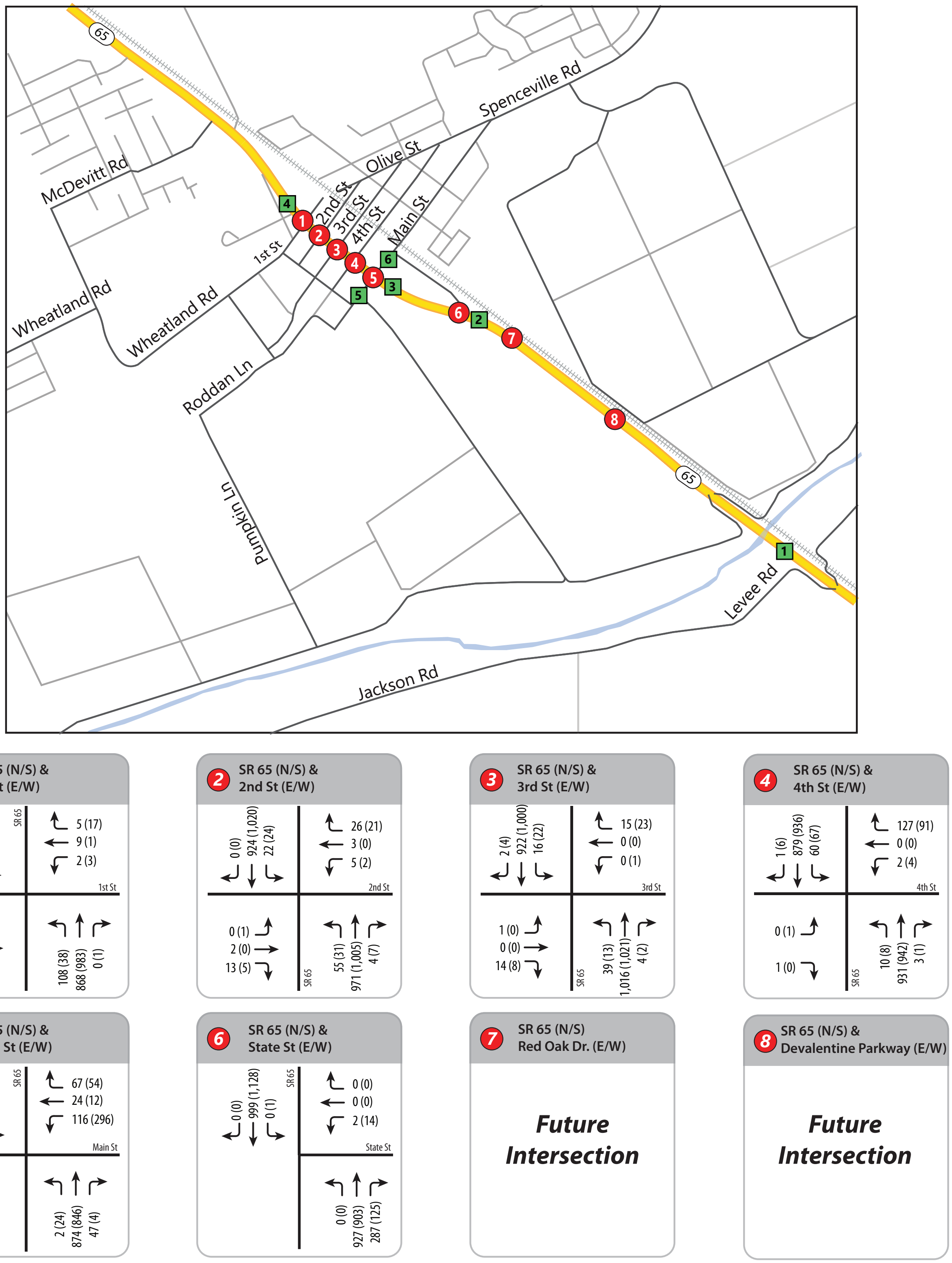
LEGEND

X	Study Intersection	X	Study Segment
XX	AM Peak Hour Volumes	(XX)	PM Peak Hour Volumes

N

TJKM

Figure 13: 2040 Cumulative Conditions – Intersection Peak Hour Traffic Volumes



LEGEND

X Study Intersection

🟩 X Study Segment

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

N

5.3 Intersection Level of Service Analysis

For 2040 Cumulative Conditions, all geometric and timing parameters are identical to 2023 Existing Conditions except that peak hour factors (PHF) have been changed to 1.0. The intersection LOS analysis results for 2040 Cumulative Conditions are summarized in **Table 14**. Intersections that operated at unacceptable LOS are shown in red. Detailed calculation sheets for 2040 Cumulative Conditions are contained in **Appendix G**.

As expected, intersection operating conditions deteriorate due to additional traffic from inherent growth of the surrounding communities. Delays increase at all intersections during both peak hours. The intersection of SR 65 & 1st Street (Study Intersection 1) in particular changes from acceptable LOS "D" to unacceptable LOS "E."

Table 14: 2040 Cumulative Conditions – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Delay (sec/veh)	LOS
1	SR 65 & 1st St.	Signal	a.m.	57.9	E
			p.m.	57.8	E
2	SR 65 & 2nd St.	TWSC	a.m.	55.8	F
			p.m.	39.0	E
3	SR 65 & 3rd St.	TWSC	a.m.	26.0	D
			p.m.	25.3	D
4	SR 65 & 4th St.	TWSC	a.m.	32.6	D
			p.m.	168.7	F
5	SR 65 & Main St.	Signal	a.m.	52.3	D
			p.m.	109.2	F
6	SR 65 & State St.	OWSC	a.m.	105.7	F
			p.m.	92.0	F
7	SR 65 & Red Oak Drive St. (Proposed)	-	a.m.	-	-
			p.m.	-	-
8	SR 65 & Devalentine Pkwy. (Proposed)	-	a.m.	-	-
			p.m.	-	-

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

Red indicates unacceptable LOS.

"-" indicates not applicable.

6.0 2040 CUMULATIVE CONDITIONS PLUS PROJECT

This section describes the impacts of the proposed Project at the study intersections and surrounding roadway system. The 2040 Cumulative plus Project Conditions scenario consists of cumulative traffic volumes and roadway facilities plus new traffic generated by the proposed Project. The 2040 Cumulative plus Project peak hour traffic volumes are illustrated in **Figure 14**.

Lane geometry and traffic control for the 2040 Cumulative plus Project Conditions are identical to 2040 Cumulative Conditions.

6.1 Segment Level of Service

The 2040 Cumulative Conditions plus Project ADT and segment LOS for each segment are shown in **Table 15**. The ADT and LOS for 2040 Cumulative Conditions are included as well for comparison. Segment LOS does not change as a result of traffic from inherent growth and from the Project. Segments along SR 65 continue to operate below acceptable conditions. The ADT data is available in **Appendix C**.

Table 15: 2040 Cumulative Conditions plus Project ADT

No.	Corridor	Segment	2040 Cumulative ADT	2040 Cumulative LOS	Additional Traffic from Project	2040 Cumulative plus Project ADT	2040 Cumulative plus Project LOS
1	SR 65	North of Levee Road	27,752	**E/F**	1,779	29,531	**E/F**
2	SR 65	South of State Street	27,392	**E/F**	2,356	29,748	**E/F**
3	SR 65	South of Main Street	26,023	**E/F**	3,554	29,577	**E/F**
4	SR 65	North of 1st Street	27,259	**E/F**	1,482	28,741	**E/F**
5	Main Street	Malone Avenue to SR 65	1,840	C	592	2,432	C
6	Main Street	SR 65 to State Street	4,036	C	888	4,924	C

6.2 Intersection Level of Service Analysis

The intersection level of service analysis results for the 2040 Cumulative Conditions plus Project scenario are summarized in **Table 16**. The results for 2040 Cumulative Conditions are included for comparison purposes. Intersections that operated at unacceptable thresholds are shown in red, and intersections that degraded between "No Project" conditions to "Plus Project" conditions per the applicable thresholds are likewise shown in red. Detailed calculation sheets for 2040 Cumulative Conditions plus Project are contained in **Appendix H**.

As illustrated in the table, operating conditions at all existing intersections worsen with the addition of Project traffic. All existing study intersections except SR 65 & 2nd Street (Study Intersection 2) incur unacceptable LOS. Additionally, a proposed intersection as part of the Project, SR 65 & Red Oak Drive Street (Study Intersection 7), experiences unacceptable LOS F without mitigations.

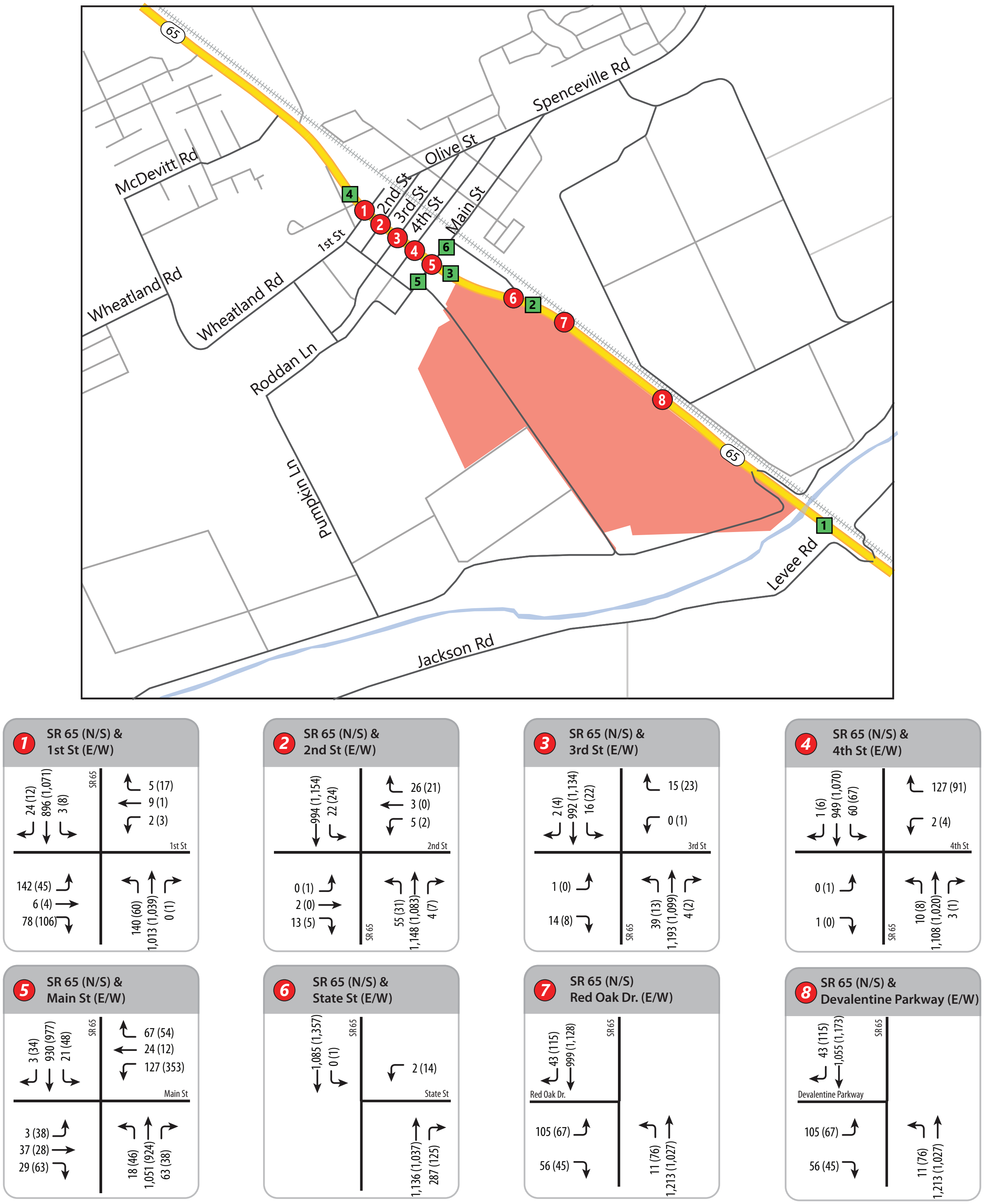
Recommended improvements are discussed in Section 6.2.1.

Table 16: 2040 Cumulative Plus Project Conditions – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Cumulative Conditions		Cumulative plus Project Conditions		Change in Delay (sec/veh)
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
1	SR 65 & 1st St.	Signal	a.m.	57.9	E	67.0	E	+9.1
			p.m.	57.8	E	82.5	F	+24.7
2	SR 65 & 2nd St.	TWSC	a.m.	55.8	F	75.7	F	+19.9
			p.m.	39.0	E	48.9	E	+9.9
3	SR 65 & 3rd St.	TWSC	a.m.	26.0	D	28.2	D	+2.2
			p.m.	25.3	D	27.9	D	+2.6
4	SR 65 & 4th St.	TWSC	a.m.	32.6	D	39.6	E	+7.0
			p.m.	168.7	F	216.5	F	+47.8
5	SR 65 & Main St.	Signal	a.m.	52.3	D	60.7	E	+8.4
			p.m.	109.2	F	157.8	F	+48.6
6	SR 65 & State St.	OWSC	a.m.	105.7	F	104.9	F	-0.8
			p.m.	92.0	F	178.5	F	+86.5
7	SR 65 & Red Oak Drive St. (Proposed)	OWSC	a.m.	-	-	530.1	F	-
			p.m.	-	-	540.7	F	-
8	SR 65 & Devalentine Pkwy. (Proposed)	OWSC	a.m.	-	-	34.0	D	-
			p.m.	-	-	31.1	D	-

Notes:
1. Signal = Signalized; OWSC = One-Way Stop Control
2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service
Red indicates unacceptable LOS.
"-" indicates not applicable.

Figure 14: 2040 Cumulative Conditions plus Project – Intersection Peak Hour Traffic Volumes



LEGEND

🟥 Project Site

Ⓧ Study Intersection

☒ Study Segment

N

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

6.2.1 Suggested Improvements

The intersections with unacceptable operating conditions were further analyzed to identify changes that would improve their conditions and reduce their delay. The improvements and their effects on intersection operating conditions are summarized in **Table 17**. Detailed calculation sheets for 2040 Cumulative Conditions plus Project with Mitigations are contained in **Appendix I**. The following improvements or mitigation measures are recommended (of note, the suggested improvements are similar to the mitigations recommended in the 2023 Existing Conditions plus Project scenario):

- SR 65 & 1st Street (Study Intersection 1)
    - Mitigation measures at this intersection include signal timing adjustments. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & 2nd Street (Study Intersection 2)
    - None.
    - A signal is not warranted at the subject intersection based off the side-street volume (through and left turning volumes from the side-streets, which experience the highest stopped-delays, are expected to comprise of eight or less vehicles per peak hour per approach). If delays do start to occur, it is expected that these vehicles would utilize the City's street grid to find alternative routes with less trip-delay.
- SR 65 & 3rd Street (Study Intersection 3)
    - None.
    - Operating conditions at this intersection remain at acceptable levels and no mitigation measures are required.
- SR 65 & 4th Street (Study Intersection 4)
    - Mitigation measures at this intersection include signalization with protected northbound-left and southbound-left movements and with optimized splits. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & Main Street (Study Intersection 5)
    - Mitigation measures at this intersection were restricted to signal timing adjustments due to right-of-way restrictions near the intersection. Although the intersection would still operate at unacceptable LOS "F," signal timing adjustments can reduce average delay to better than no project conditions. As such, all Project effects on delay are mitigated.
- SR 65 & State Street (Study Intersection 6)
    - None.
    - While delays at the intersection are relatively high, improvements to reduce delays at SR 65 & Main Street (Study Intersection 5) would induce southbound vehicles that are using State Street to bypass existing congestion at SR 65 & Main Street (Study Intersection 5) to revert back to using SR 65 & Main Street (Study Intersection 5).

- SR 65 & Red Oak Drive (Study Intersection 7)
  - Mitigation measures at this intersection include signalization with optimized splits. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & Devalentine Parkway (Study Intersection 8)
  - Mitigation measures at this intersection include signalization with optimized splits.
    - Of note, a signal is not required to improve peak hour LOS at the subject intersection but is being suggested to mirror improvements needed under the 2023 Existing Conditions plus Project Scenario.
  - Of note, current plans for the development illustrate a northbound acceleration lane for eastbound-left turning vehicles to perform a two-stage maneuver and accelerate to match speed of vehicles traveling north on SR 65. This measure would not be required with the construction of a signal.

It should be noted that signal warrant assessments were conducted for intersections based on the requirements of Warrant 2 (Four-hour Vehicular Volume) and Warrant 3 (Peak Hour) in the CA MUTCD. The operating conditions during the p.m. peak hour at SR 65 & 4th Street (Study Intersection 4) warrant signalization under Warrant 2 but not under Warrant 3. TJKM recommends that a full signal warrant assessment be conducted at each intersection before signalization.

Table 17: 2040 Cumulative Conditions plus Project with Mitigations – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Cumulative Conditions		Cumulative plus Project Conditions with Mitigations		Change in Delay (sec/veh)	Signal Warranted?
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
1	SR 65 & 1st St.	Signal	a.m.	**57.9**	**E**	43.9	D	-14.0	-
			p.m.	**57.8**	**E**	27.6	C	-30.2	-
2	SR 65 & 2nd St.	TWSC	a.m.	**55.8**	**F**	**75.7**	**F**	+19.9	No
			p.m.	**39.0**	**E**	**48.9**	**E**	+9.9	No
3	SR 65 & 3rd St.	TWSC	a.m.	26.0	D	28.2	D	+2.2	No
			p.m.	25.3	D	27.9	D	+2.6	No
4	SR 65 & 4th St.	TWSC	a.m.	32.6	D	8.9	A	-23.7	**Yes**
			p.m.	**168.7**	**F**	8.9	A	-159.8	**Yes***
5	SR 65 & Main St.	Signal	a.m.	52.3	D	38.1	D	-14.2	-
			p.m.	**109.2**	**F**	**84.9**	**F**	-24.3	-
6	SR 65 & State St.	OWSC	a.m.	**105.7**	**F**	**104.9**	**F**	-0.8	No
			p.m.	**92.0**	**F**	**178.5**	**F**	+86.5	No
7	SR 65 & Red Oak Dr. (Proposed)	OWSC	a.m.	-	-	8.2	A	-	**Yes**
			p.m.	-	-	9.4	A	-	No
8	SR 65 & Devalentine Pkwy. (Proposed)	OWSC	a.m.	-	-	13.0	B	-	**Yes**
			p.m.	-	-	14.6	B	-	No

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

*5. *Meets Warrant 2 (Four-hour vehicular volume) but not Warrant 3 (Peak hour) in the CA MUTCD (2014 Ed.).*

Red indicates unacceptable LOS.

"-" indicates not applicable.

7.0 2040 CUMULATIVE CONDITIONS WITH THE SR 65 REALIGNMENT

This section discusses the potential impacts of the planned SR 65 Realignment near the City of Wheatland.

The City of Wheatland City Council adopted a resolution in 2017 to approve the formation of the South Yuba Transportation Improvement Authority (SYTIA). The formation allows the City of Wheatland to partner with Yuba County in planning and identifying key transportation improvements in the south Yuba County area. SYTIA completed a Comprehensive Implementation Strategy (CIS) in 2022 and identified a future SR 65 Realignment as a key transportation improvement[4].

Additionally, the City of Wheatland has adopted the following policy within its General Plan Policy Document on page 2-5 (Policy 2.A.7):

> *The City shall proactively pursue financing in a timely manner for all components of the transportation system, including securing right of way, particularly an eastern alignment of the SR 65 bypass, to achieve and maintain adopted level of service standards.*

Thus, the City of Wheatland considers the SR 65 Realignment as a measure to improve its intersection operating conditions.

Currently, two alignment alternatives ("Alternative A" and "Alternative B") are being considered for the SR 65 Realignment. Alternative A is shown in **Figure 15**. Note that Alternative B is more compact than Alternative A and runs closer to the City of Wheatland.

In order to determine the changes in traffic patterns anticipated with the construction of the bypass, the latest SACSIM model was run using two different analysis scenarios: without the bypass and with the bypass. The differences in traffic volumes observed within the City's vicinity were used to determine anticipated re-routing percentages by peak hour. The expected reroute in traffic volumes to the existing SR 65 alignment in response to the SR 65 Realignment is shown in **Figure 16**.

The traffic reroutes were applied to the 2040 Cumulative Conditions volumes (shown in **Figure 13**) to approximate the volumes under the 2040 Cumulative Conditions with the SR 65 Realignment scenario, as illustrated in **Figure 17**.

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[4] Source: https://www.yuba.org/departments/community_development/east_wheatland_expressway.php

Figure 15: SR 65 Realignment

LEGEND

🟥 Project Site

▮▮▮ SR 65 Bypass

Figure 16: Change in Intersection Peak Hour Traffic Volumes from SR 65 Realignment

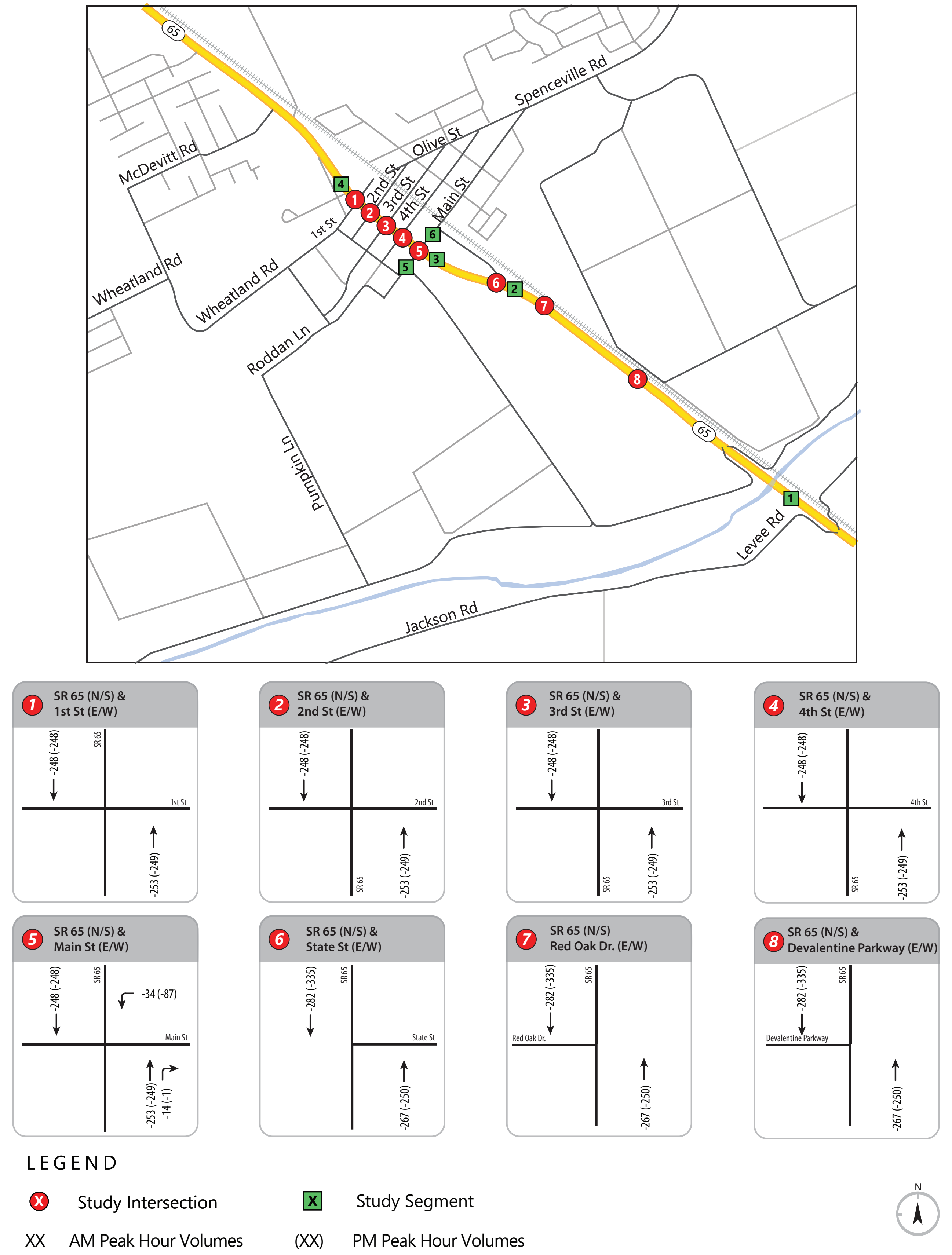
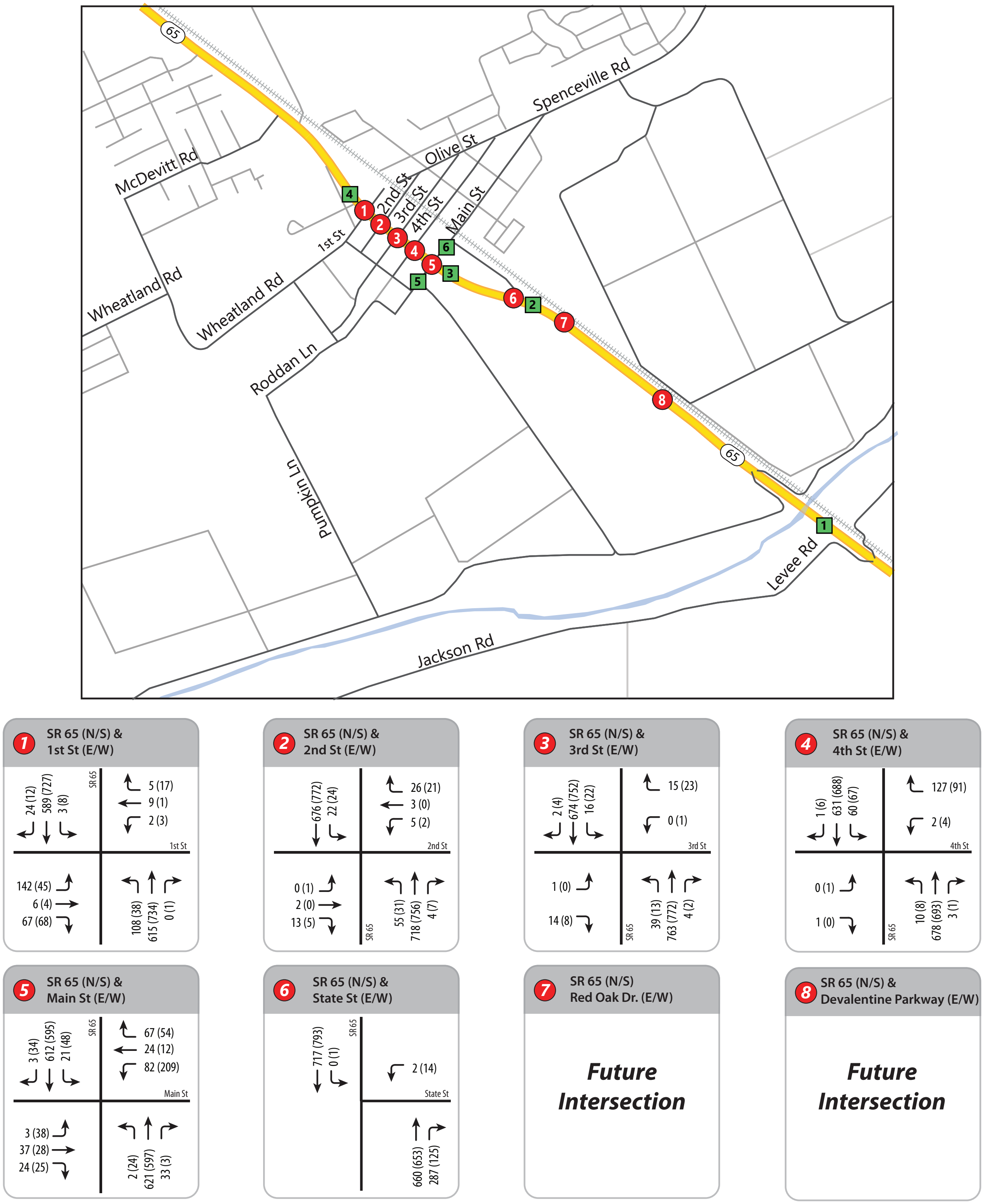


Figure 17: 2040 Cumulative Conditions with SR 65 Realignment – Intersection Peak Hour Traffic Volumes



LEGEND

🟥 Study Intersection

🟩 Study Segment

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

7.1 Segment Level of Service

The 2040 Cumulative Conditions with the SR 65 Realignment ADT and segment LOS for each segment are shown in **Table 18**. Segment ADT and LOS for 2040 Cumulative Conditions are included for comparison. Segment LOS improves along segments on SR 65 due to traffic reroutes from the SR 65 Realignment. The ADT data is available in **Appendix C**.

Table 18: 2040 Cumulative Conditions with SR 65 Realignment ADT

No.	Corridor	Segment	2040 Cumulative ADT	2040 Cumulative LOS	Change in Traffic from SR 65 Realignment	2040 Cumulative with SR 65 Realignment ADT	2040 Cumulative with SR 65 Realignment LOS
1	SR 65	North of Levee Road	27,752	**E/F**	-13,340	14,412	C
2	SR 65	South of State Street	27,392	**E/F**	-13,167	14,225	C
3	SR 65	South of Main Street	26,023	**E/F**	-12,509	13,514	C
4	SR 65	North of 1st Street	27,259	**E/F**	-9,115	18,144	D
5	Main Street	Malone Avenue to SR 65	1,840	C	0	1,840	C
6	Main Street	SR 65 to State Street	4,036	C	-587	3,449	C

7.2 Intersection Level of Service Analysis

The intersection level of service analysis results for the 2040 Cumulative Conditions with the SR 65 Realignment scenario are summarized in **Table 19**. The results for 2040 Cumulative Conditions (i.e., without the bypass) are included for comparison purposes. Intersections that operated at unacceptable thresholds are shown in red. Detailed calculation sheets for 2040 Cumulative Conditions with the SR 65 Realignment are contained in **Appendix J**.

The SR 65 Realignment results in improved operating conditions and less delay at the study intersections as traffic shifts away from the existing SR 65 alignment. Nevertheless, the intersections of SR 65 & 4th Street (Study Intersection 4), SR 65 & Main Street (Study Intersection 5), SR 65 & State Street (Study Intersection 6) continue to operate at unacceptable LOS during the p.m. peak hour.

Table 19: 2040 Cumulative Conditions with the SR 65 Realignment – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Cumulative Conditions		Cumulative plus Bypass Conditions		Change in Delay (sec/veh)
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
1	SR 65 & 1st St.	Signal	a.m.	57.9	E	53.2	D	-4.7
			p.m.	57.8	E	42.8	D	-15.0
2	SR 65 & 2nd St.	TWSC	a.m.	55.8	F	23.7	C	-32.1
			p.m.	39.0	E	21.4	C	-17.6
3	SR 65 & 3rd St.	TWSC	a.m.	26.0	D	15.7	C	-10.3
			p.m.	25.3	D	16.6	C	-8.7
4	SR 65 & 4th St.	TWSC	a.m.	32.6	D	17.0	C	-15.6
			p.m.	168.7	F	60.4	F	-108.3
5	SR 65 & Main St.	Signal	a.m.	52.3	D	35.9	D	-16.4
			p.m.	109.2	F	74.2	E	-35.0
6	SR 65 & State St.	OWSC	a.m.	105.7	F	33.6	D	-72.1
			p.m.	92.0	F	35.0	E	-57.0
7	SR 65 & Red Oak Dr. (Proposed)	OWSC	a.m.	-	-	-	-	-
			p.m.	-	-	-	-	-
8	SR 65 & Devalentine Pkwy. (Proposed)	OWSC	a.m.	-	-	-	-	-
			p.m.	-	-	-	-	-

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

Red indicates unacceptable LOS.

"-" indicates not applicable.

8.0 2040 CUMULATIVE CONDITIONS WITH THE SR 65 REALIGNMENT PLUS PROJECT

This section describes the impacts of the proposed Project at the study intersections and surrounding roadway system. The 2040 Cumulative Conditions with the SR 65 Realignment plus Project scenario considers cumulative traffic volumes and roadway facilities plus new traffic generated by the proposed Project and rerouted traffic due to the SR 65 Realignment. The 2040 Cumulative Conditions with the SR 65 Realignment plus Project peak hour traffic volumes are illustrated in **Figure 18**.

Lane geometry and traffic control for the 2040 Cumulative Conditions with the SR 65 Realignment plus Project are identical to 2040 Cumulative Conditions with the SR 65 Realignment.

8.1 Segment Level of Service

The 2040 Cumulative Conditions with the SR 65 Realignment plus Project ADT and segment LOS for each segment are shown in **Table 20**. Segment LOS improves along segments on SR 65 due to traffic reroutes from the SR 65 Realignment but decreases due to traffic from the Project. Yet, the segments of SR 65 south of Main Street (Study Intersection 3) and SR 65 & north of 1st Street (Study Intersection 4) operate at unacceptable segment LOS "E/F." Nevertheless, traffic volumes along all SR 65 segments are still substantially less than those of 2040 Cumulative Conditions (i.e, with no bypass). The ADT data is available in **Appendix C**.

Table 20: 2040 Cumulative Conditions with SR 65 Realignment plus Project ADT

No.	Corridor	Segment	2040 Cumulative with SR 65 Realignment ADT	2040 Cumulative with SR 65 Realignment LOS	Additional Traffic from Project	2040 Cumulative with SR 65 Realignment plus Project ADT	2040 Cumulative with SR 65 Realignment plus Project LOS
1	SR 65	North of Levee Road	14,412	C	1,779	16,191	D
2	SR 65	South of State Street	14,225	C	2,356	16,581	D
3	SR 65	South of Main Street	13,514	C	3,554	17,068	**E/F**
4	SR 65	North of 1st Street	18,144	D	1,482	19,626	**E/F**
5	Main Street	Malone Avenue to SR 65	1,840	C	592	2,432	C
6	Main Street	SR 65 to State Street	3,449	C	888	4,337	C

8.2 Intersection Level of Service Analysis

The intersection level of service analysis results for the 2040 Cumulative Conditions with the SR 65 Realignment plus Project scenario are summarized in **Table 21**. The results for 2040 Cumulative Conditions with the SR 65 Realignment are included for comparison purposes. Intersections that operated at unacceptable thresholds are shown in red. Detailed calculation sheets for 2040 Cumulative Conditions with the SR 65 Realignment plus Project are contained in **Appendix K**.

The intersections of SR 65 & 4th Street (Study Intersection 4), SR 65 & Main Street (Study Intersection 5), SR 65 & State Street (Study Intersection 6), and SR 65 & Red Oak Drive (Study Intersection 7) experience either unacceptable LOS conditions or unacceptable increases in delays.

Recommended improvements are discussed in Section 8.2.1.

Table 21: 2040 Cumulative Conditions with the SR 65 Realignment plus Project – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Cumulative plus Bypass Conditions		Cumulative plus Bypass plus Project Conditions		Change in Delay (sec/veh)
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
1	SR 65 & 1st St.	Signal	a.m.	53.2	D	49.9	D	-3.3
			p.m.	42.8	D	47.1	D	+4.3
2	SR 65 & 2nd St.	TWSC	a.m.	23.7	C	32.8	D	+9.1
			p.m.	21.4	C	26.7	D	+5.3
3	SR 65 & 3rd St.	TWSC	a.m.	15.7	C	18.0	C	+2.3
			p.m.	16.6	C	18.6	C	+2.0
4	SR 65 & 4th St.	TWSC	a.m.	17.0	C	22.2	C	+5.2
			p.m.	**60.4**	**F**	**86.8**	**F**	+26.4
5	SR 65 & Main St.	Signal	a.m.	35.9	D	38.5	D	+2.6
			p.m.	**74.2**	**E**	**97.7**	**F**	+23.5
6	SR 65 & State St.	OWSC	a.m.	33.6	D	**48.9**	**E**	+15.3
			p.m.	**35.0**	**E**	**61.9**	**F**	+26.9
7	SR 65 & Red Oak Dr. (Proposed)	OWSC	a.m.	-	-	**124.6**	**F**	-
			p.m.	-	-	**92.9**	**F**	-
8	SR 65 & Devalentine Pkwy. (Proposed)	OWSC	a.m.	-	-	21.6	C	-
			p.m.	-	-	20.2	C	-

Notes:
1. Signal = Signalized; OWSC = One-Way Stop Control
2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service
Red indicates unacceptable LOS.
"-" indicates not applicable.

Figure 18: 2040 Cumulative Conditions with SR 65 Realignment plus Project – Intersection Peak Hour Traffic Volumes

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8.2.1 Suggested Improvements

The intersections with unacceptable operating conditions were further analyzed to identify changes that would improve their conditions and reduce their delay. The improvements and their effects on intersection operating conditions are summarized in **Table 22**. Detailed calculation sheets for 2040 Cumulative Conditions with the SR 65 Realignment plus Project with Mitigations are contained in **Appendix L**. The following improvements or mitigation measures are recommended:

- SR 65 & 1st Street (Study Intersection 1)
    - None.
    - Operating conditions at this intersection remain at acceptable levels and no mitigation measures are required.
- SR 65 & 2nd Street (Study Intersection 2)
    - None.
    - Operating conditions at this intersection remain at acceptable levels and no mitigation measures are required.
- SR 65 & 3rd Street (Study Intersection 3)
    - None.
    - Operating conditions at this intersection remain at acceptable levels and no mitigation measures are required.
- SR 65 & 4th Street (Study Intersection 4)
    - Mitigation measures at this intersection include signalization with protected northbound-left and southbound-left movements and with optimized splits. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & Main Street (Study Intersection 5)
    - Mitigation measures at this intersection include signal timing adjustments. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & State Street (Study Intersection 6)
    - None.
    - While delays at the intersection are relatively high, improvements to reduce delays at SR 65 & Main Street (Study Intersection 5) would induce southbound vehicles that are using State Street to bypass existing congestion at SR 65 & Main Street (Study Intersection 5) to revert back to using SR 65 & Main Street (Study Intersection 5).
- SR 65 & Red Oak Drive (Study Intersection 7)
    - Mitigation measures at this intersection include signalization with optimized splits. The mitigation measures would reduce intersection delay to acceptable LOS.
- SR 65 & Devalentine Parkway (Study Intersection 8)
    - Mitigation measures at this intersection include signalization with optimized splits.

    - Of note, a signal is not required to improve peak hour LOS at the subject intersection but is being suggested to mirror improvements needed under the 2023 Existing Conditions plus Project Scenario.
  - Of note, current plans for the development illustrate a northbound acceleration lane for eastbound-left turning vehicles to perform a two-stage maneuver and accelerate to match speed of vehicles traveling north on SR 65. This measure would not be required with the construction of a signal.

Note additionally that signal warrant assessments were conducted for intersections based on the requirements of Warrant 2 (Four-hour Vehicular Volume) and Warrant 3 (Peak Hour) in the CA MUTCD. The operating conditions during the p.m. peak hour at SR 65 & 4th Street (Study Intersection 4) warrant signalization under Warrant 2 but not under Warrant 3. TJKM recommends that a full signal warrant assessment be conducted at each intersection before signalization.

Table 22: 2040 Cumulative Conditions with the SR 65 Realignment plus Project with Mitigations – Intersection Level of Service Analysis Results

No.	Intersection	Control Type	Peak Hour	Cumulative plus Bypass Conditions		Cumulative plus Bypass plus Project Conditions with Mitigations		Change in Delay (sec/veh)	Signal Warranted?
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS		
1	SR 65 & 1st St.	Signal	a.m.	53.2	D	47.0	D	-6.2	-
			p.m.	42.8	D	42.1	D	-0.7	-
2	SR 65 & 2nd St.	TWSC	a.m.	23.7	C	32.8	D	+9.1	No
			p.m.	21.4	C	26.7	D	+5.3	No
3	SR 65 & 3rd St.	TWSC	a.m.	15.7	C	18.0	C	+2.3	No
			p.m.	16.6	C	18.6	C	+2.0	No
4	SR 65 & 4th St.	TWSC MIT: Signal	a.m.	17.0	C	10.1	B	-6.9	**Yes**
			p.m.	**60.4**	**F**	8.4	A	-52.0	**Yes***
5	SR 65 & Main St.	Signal	a.m.	35.9	D	26.9	C	-9.0	-
			p.m.	**74.2**	**E**	45.2	D	-29.0	-
6	SR 65 & State St.	OWSC	a.m.	33.6	D	**48.9**	**E**	+15.3	No
			p.m.	**35.0**	**E**	**61.9**	**F**	+26.9	No
7	SR 65 & Red Oak Dr. (Proposed)	OWSC MIT: Signal	a.m.	-	-	8.4	A	-	**Yes**
			p.m.	-	-	6.9	A	-	No
8	SR 65 & Devalentine Pkwy. (Proposed)	OWSC MIT: Signal	a.m.	-	-	10.9	B	-	**Yes**
			p.m.	-	-	13.4	B	-	No

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control

2. a.m. = a.m. Peak Hour; p.m. = p.m. Peak Hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.

4. LOS = Level of Service

*5. *Meets Warrant 2 (Four-hour vehicular volume) but not Warrant 3 (Peak hour) in the CA MUTCD (2014 Ed.).*

Red indicates unacceptable LOS.

"-" indicates not applicable.

9.0 ADDITIONAL ANALYSIS

The following sections provide additional analyses of other transportation issues associated with the project site, including:

- Alternative Modes of Transportation;
- Site Access Management, Internal Circulation, and Parking.

Unlike the VMT or LOS impact methodology, the analyses in these sections are generally based on professional judgment in accordance with the standards and methods employed by traffic engineers and planners.

9.1 Alternative Modes of Transportation

9.1.1 Pedestrian Impacts

A significant impact occurs if a proposed project conflicts with applicable or adopted policies, plans, or programs related to pedestrian facilities or otherwise decreases the performance or safety of pedestrian facilities.

The City of Wheatland has adopted the following requirement in Section 12.04.030 of its Municipal Code:

> *Any person or entity having charge or control of any real property lot or parcel, either as owner, agent, lessee, tenant or otherwise, who proposes to make improvements valued in excess of a threshold dollar amount to be set by city council resolution, as amended from time to time, to the lot or parcel shall simultaneously construct and install curbs, gutters and sidewalks upon those portions of the lot or parcel abutting upon any public street. The curb, gutter and sidewalk design and construction shall comply with the technical standards adopted from time to time by the city public works director, and the work shall be performed to the satisfaction of the city public works director and building official.*

A tentative map of the proposed Project displayed in **Figure 2** shows that concrete sidewalks would be built on both sides of all roadways within the development. Thus, the proposed Project would not result in any such conflicts; therefore, the impact to pedestrian facilities is expected to be **less-than-significant**.

9.1.2 Bicycle Impacts

The proposed Project is located in an area with very little existing bicycle infrastructure. Only a bike route with Class II bike lanes on both sides of SR 65 exists from McDevitt Drive to just south of Main Street. According to the City of Wheatland's 2014 Bikeway Master Plan (Page 33), additional bicycle facilities are planned to be implemented along roadways in and around the Project's vicinity, including:

- Class II bike lanes along SR 65 east of the proposed Project site and along a conceptual roadway that loops within the proposed Project site; a
- Class I pedestrian-bike path that extends north-south along Malone Avenue through the proposed Project site and connects Main Street with a proposed Class I pedestrian-bike path along the north bank of Bear River; the proposed Malone Paseo within the proposed Project site; and a

- Combination of a Class II bike lane and a "super sidewalk" facility bisecting the proposed Project site in the east-west direction.

An impact to bicyclists occurs if a proposed project disrupts existing bicycle facilities, or conflicts with or creates inconsistencies with adopted bicycle system plans, guidelines, and policies. A significant impact occurs if a proposed project conflicts with applicable or adopted policies, plans, or programs related to bicycle facilities or otherwise decreases the performance or safety of bicycle facilities.

A tentative map of the proposed Project shown in **Figure 2** illustrates the following:

- Class II bike lanes would be implemented along both sides of Red Oak Drive, Heritage Oakway, Devalentine Parkway, and along the south side of SR 65, completing the loop shown in the *2014 Bikeway Master Plan*; a
- Class I pedestrian-bike path would be implemented along the proposed Malone Paseo, which follows the existing route of Malone Avenue, and would connect the paved portion of Malone Avenue and Main Street to the north bank of Bear River just west of the existing wastewater treatment plant; and
- Class II bike lanes and concrete sidewalks would be implemented on both sides of Devalentine Parkway from SR 65 in the east to the western limit of the proposed Project site in anticipation of being extended further west in future developments.

Thus, the proposed Project would not result in any such conflicts; therefore, the impact to bicycle facilities is expected to be **less-than-significant**.

9.1.3 Transit Impacts

As the proposed Project would not conflict with a program, plan, ordinance or policy regarding existing or planned transit facilities, the impact to transit facilities is expected to be **less-than-significant**.

Nevertheless, the proposed Project could increase transit demand within the City of Wheatland along with several other residential projects in the pipeline. This may necessitate the need to increase transit frequency beyond that currently provided, as described in Section 3.4.

It is suggested that the proposed Project coordinate with the City of Wheatland and bus service providers as Wheatland continues to grow in population to reroute existing bus services closer to the Project site, to increase transit frequencies, and to implement bus stop facilities (e.g., bus shelters, bus turnouts, or center median stops) east of the Project site along SR 65. These improvements would allow potential increased transit demand from the proposed Project and would help reduce overall VMT/capita within the City.

9.2 Site Access Management, Internal Circulation, and Parking

9.2.1 Site Access Management

The proposed Project is a greenfield development and would be accessible via two proposed full-movement intersections along SR 65 (SR 65 & Red Oak Drive and SR 65 & Devalentine Parkway). According to the tentative map shown in **Figure 2**, the proposed intersections would be approximately 1,800 feet apart, and

SR 65 & Red Oak Drive would be approximately 500 feet south of SR 65 & State Street. The adequate distances between the proposed and existing intersections indicate little to no potential interaction between intersection functional areas.

Additionally, the Project proposes acceleration lanes and decelerations lanes along SR 65 upstream and downstream of the two proposed intersections. The facilities improve site access safety by reducing speed differentials along SR 65. Of note, the proposed northbound acceleration lane downstream of SR 65 & Devalentine Parkway (Study Intersection 8) would not be required with the installation of a traffic signal as recommended elsewhere in this report (as a signal would eliminate the need for a two-stage crossing for eastbound-left movements).

Finally, the two proposed intersections would provide an adequate level of robustness in site accessibility if one intersection were blocked due to some event.

Thus, access management impacts of the proposed development are considered **less-than-significant**.

9.2.2 Internal Circulation

Internal vehicular circulation would be accommodated by local roadways that provide direct access to all lots in the proposed Project.

Red Oak Drive and DeValentine Parkway would both traverse the proposed development from SR 65 in the east to west of the proposed development to serve as east-west thoroughfares. Future plans would extend Red Oak Drive and DeValentine Parkway further west to accommodate additional developments. Previously, the site was assessed with only DeValentine serving this purpose; with the revision, traffic would likely be more evenly distributed within the development and the network as a whole provides better system redundancy.

A significant impact would occur if the internal circulation of a proposed project conflicts with or creates inconsistencies with adopted plans, guidelines, or policies or does not provide adequate access within the site.

Since the proposed Project would provide adequate access to all proposed lots and facilities in the development site, and since the proposed Project would not have negative effects on access to existing lots or facilities within the City with suggested recommendations, the proposed Project's impacts on internal circulation would be **less-than-significant**.

9.2.3 Parking

A significant impact would occur if the off-street parking facilities of a proposed project conflicts with or creates inconsistencies with adopted plans, guidelines, or policies or does not provide adequate access within the site.

The City of Wheatland's municipal code requires two off-street parking spaces for each single-family dwelling unit. Given that 685 single-family dwelling units are proposed, the Project would need to provide 1,370 off-street parking spaces to be **consistent** with City of Wheatland standards.

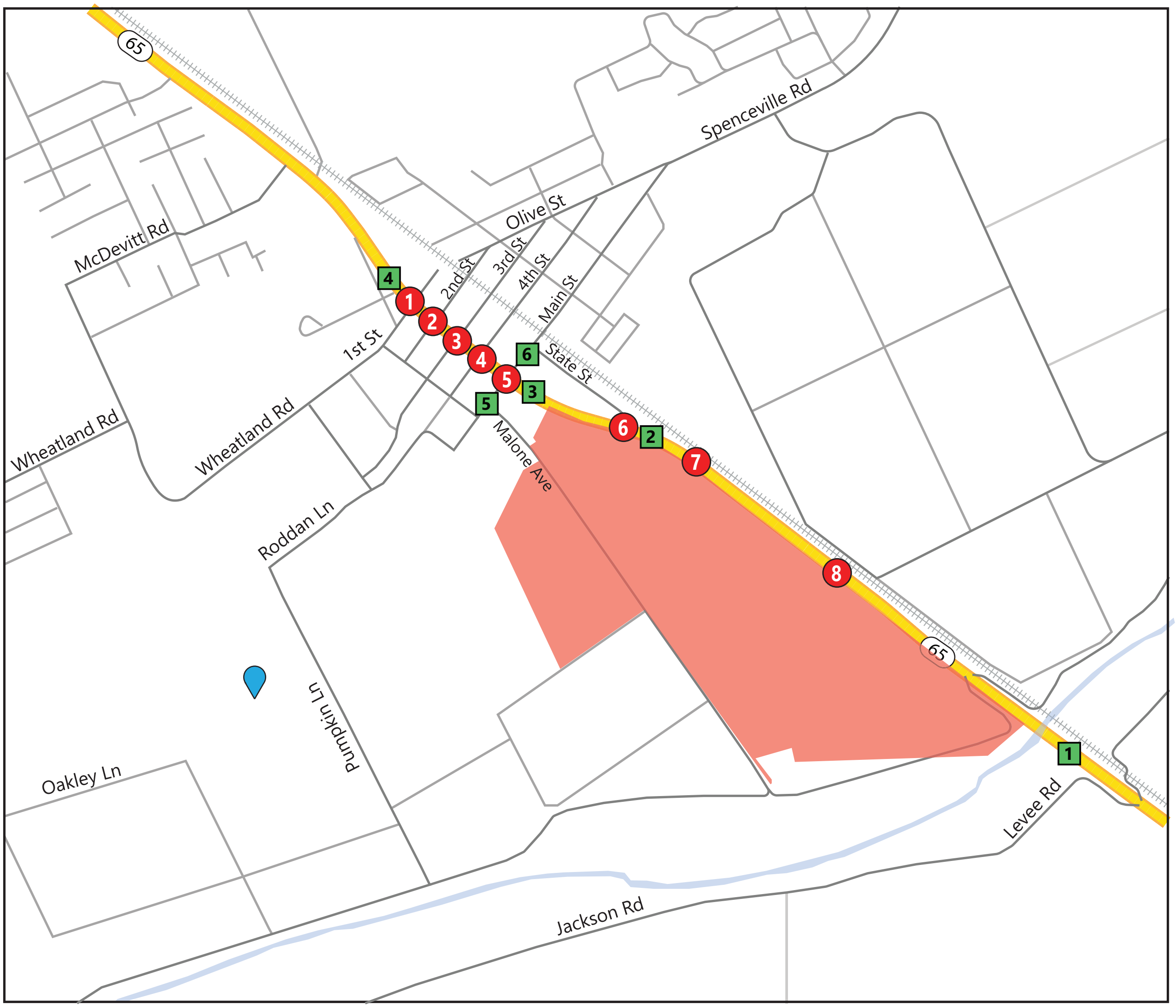
9.3 Bishop's Pumpkin Farm

Bishop's Pumpkin Farm, located just south of the City of Wheatland and to the west of the proposed Project, is a pride of the City. The site in relation to downtown Wheatland and the proposed Project is illustrated in **Figure 19**. The Farm is currently mainly accessible via Roddan Lane in the downtown area. Generally between September and November (pumpkin season), the Farm becomes a major destination which attracts thousands of visitors from the surrounding region. The added seasonal traffic on the road network requires the City and Caltrans to adjust signal timings along SR-65 and to monitor conditions to prevent excessive queues and potential gridlock.

With respect to the proposed Project, the two future east-west thoroughfares of Red Oak Drive and DeValentine Parkway could provide additional network connectivity that could redirect some traffic (notably northbound traffic along SR-65). It is recommended that the City develop temporary traffic routing plans to potentially use Red Oak Drive and/or DeValentine Parkway in coordination with the local police department and to coordinate with Caltrans on implementing temporary signal timing plans along SR 65 (including at proposed intersections) to accommodate and guide such traffic.

Of note, additional seasonal network alleviation would be expected with the proposed SR-65 bypass.

Figure 19: Location of Bishop's Pumpkin Farm Map



LEGEND

🟥 Project Site

Ⓧ Study Intersection

☒ Study Segment

Bishop's Pumpkin Farm

N

Appendix A: HCM Methodology

APPENDIX A
LEVEL OF SERVICE

The description and procedures for calculating capacity and level of service are found in Transportation Research Board, Highway Capacity Manual 2000. Highway Capacity Manual 2000 represents the latest research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with level-of-service A representing the best operating conditions and level-of-service F the worst. Each level of service represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish service levels.

A general description of service levels for various types of facilities is shown in Table A-I

Table A-I: Level of Service Description

	Uninterrupted Flow	**Interrupted Flow**
Facility Type	Freeways Multi-lane Highways Two-lane Highways Urban Streets	Signalized Intersections Unsignalized Intersections Two-way Stop Control All-way Stop Control
LOS		
A	Free-flow	Very low delay.
B	Stable flow. Presence of other users noticeable.	Low delay.
C	Stable flow. Comfort and convenience starts to decline.	Acceptable delay.
D	High density stable flow.	Tolerable delay.
E	Unstable flow.	Limit of acceptable delay.
F	Forced or breakdown flow.	Unacceptable delay

Source: Highway Capacity Manual 2000

Urban Streets

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas.

Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials.

Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals.

Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks. Pedestrian conflicts and lane obstructions created by stopping or standing buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control. As a result, these factors also affect quality of service.

The street environment includes the geometric characteristics of the facility, the character of roadside activity and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway density, spacing between signalized intersections, existence of parking, level of pedestrian activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic control (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds, however, such controls are needed to establish right-of-way.

The average travel speed for through vehicles along an urban street is the determinant of the operating level of service. The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

Level-of-service A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.

Level-of-service B describes reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.

Level-of-service C describes stable operations, however, ability to maneuver and change lanes in midblock location may be more restricted than at level-of-service B. Longer queues, adverse signal coordination, or both may contribute to lower travel speeds.

Level-of-service D borders on a range in which in which small increases in flow may cause substantial increases in delay and decreases in travel speed. Level-of-service D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.

Level-of-service E is characterized by significant delays and lower travel speeds. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

Level-of-service F is characterized by urban street flow at extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

The methodology to determine level of service stratifies urban streets into four classifications. The classifications are complex, and are related to functional and design categories. Table A-II describes the functional and design categories, while Table A-III relates these to the urban street classification.

Once classified, the urban street is divided into segments for analysis. An urban street segment is a one-way section of street encompassing a series of blocks or links terminating at a signalized intersection. Adjacent segments of urban streets may be combined to form larger street sections, provided that the segments have similar demand flows and characteristics.

Levels of service are related to the average travel speed of vehicles along the urban street segment or section.

Travel times for existing conditions are obtained by field measurements. The maximum-car technique is used. The vehicle is driven at the posted speed limit unless impeded by actual traffic conditions. In the maximum-car technique, a safe level of vehicular operation is maintained by observing proper following distances and by changing speeds at reasonable rates of acceleration and deceleration. The maximum-car technique provides the best base for measuring traffic performance.

An observer records the travel time and locations and duration of delay. The beginning and ending points are the centers of intersections. Delays include times waiting in queues at signalized intersections. The travel speed is determined by dividing the length of the segment by the travel time. Once the travel speed on the arterial is determined, the level of service is found by comparing the speed to the criteria in Table A-IV. Level-of-service criteria vary for the different classifications of urban street, reflecting differences in driver expectations.

Table A-II: Functional and Design Categories for Urban Streets

<table>
<tr><th rowspan="2">Criterion</th><th colspan="4">Functional Category</th></tr>
<tr><th colspan="2">Principal Arterial</th><th colspan="2">Minor Arterial</th></tr>
<tr><td>Mobility function</td><td colspan="2">Very important</td><td colspan="2">Important</td></tr>
<tr><td>Access function</td><td colspan="2">Very minor</td><td colspan="2">Substantial</td></tr>
<tr><td>Points connected</td><td colspan="2">Freeways, important activity centers, major traffic generators</td><td colspan="2">Principal arterials</td></tr>
<tr><td>Predominant trips served</td><td colspan="2">Relatively long trips between major points and through trips entering, leaving, and passing through city</td><td colspan="2">Trips of moderate length within relatively small geographical areas</td></tr>
<tr><th rowspan="2">Criterion</th><th colspan="4">Design Category</th></tr>
<tr><th>High-Speed</th><th>Suburban</th><th>Intermediate</th><th>Urban</th></tr>
<tr><td>Driveway access density</td><td>Very low density</td><td>Low density</td><td>Moderate density</td><td>High density</td></tr>
<tr><td>Arterial type</td><td>Multilane divided; undivided or two-lane with shoulders</td><td>Multilane divided: undivided or two-lane with shoulders</td><td>Multilane divided or undivided; one way, two lane</td><td>Undivided one way; two way, two or more lanes</td></tr>
<tr><td>Parking</td><td>No</td><td>No</td><td>Some</td><td>Usually</td></tr>
<tr><td>Separate left-turn lanes</td><td>Yes</td><td>Yes</td><td>Usually</td><td>Some</td></tr>
<tr><td>Signals per mile</td><td>0.5 to 2</td><td>1 to 5</td><td>4 to 10</td><td>6 to 12</td></tr>
<tr><td>Speed limits</td><td>45 to 55 mph</td><td>40 to 45 mph</td><td>30 to 40 mph</td><td>25 to 35 mph</td></tr>
<tr><td>Pedestrian activity</td><td>Very little</td><td>Little</td><td>Some</td><td>Usually</td></tr>
<tr><td>Roadside development</td><td>Low density</td><td>Low to medium density</td><td>Medium to moderate density</td><td>High density</td></tr>
</table>

Source: Highway Capacity Manual 2000

Table A-III: Urban Street Class based on Function and Design Categories

	Functional Category	
Design Category	**Principal Arterial**	**Minor Arterial**
High-Speed	I	Not applicable
Suburban	II	II
Intermediate	II	III or IV
Urban	III or IV	IV

Source: Highway Capacity Manual 2000

Table A-IV: Urban Street Levels of Service by Class

Urban Street Class	I	II	III	IV
Range of Free Flow Speeds (mph)	45 to 55	35 to 45	30 to 35	25 to 35
Typical Free Flow Speed (mph)	50	40	33	30
Level of Service	**Average Travel Speed (mph)**			
A	>42	>35	>30	>25
B	>34	>28	>24	>19
C	>27	>22	>18	>13
D	>21	>17	>14	>9
E	>16	>13	>10	>7
F	≤16	≤13	≤10	≤7

Source: Highway Capacity Manual 2000

Interrupted Flow

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs. These all operate quite differently and have differing impacts on overall flow.

Signalized Intersections

The capacity of a highway is related primarily to the geometric characteristics of the facility, as well as to the composition of the traffic stream on the facility. Geometrics are a fixed, or non-varying, characteristic of a facility.

At the signalized intersection, an additional element is introduced into the concept of capacity: time allocation. A traffic signal essentially allocates time among conflicting traffic movements seeking use of the same physical space. The way in which time is allocated has a significant impact on the operation of the intersection and on the capacity of the intersection and its approaches.

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, *i. e.,* in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, level of service criteria for traffic signals are stated in terms of average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the ratio of green time to cycle length and the volume to capacity ratio for the lane group.

For each intersection analyzed the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A level of service designation is given to the control delay to better describe the level of operation. A description of levels of service for signalized intersections can be found in Table A-V

Table A-V: Description of Level of Service for Signalized Intersections

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase doe not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestions becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: Highway Capacity Manual 2000

The use of control delay, which may also be referred to as signal delay, was introduced in the 1997 update to the *Highway Capacity Manual*, and represents a departure from previous updates. In the third edition, published in 1985 and the 1994 update to the third edition, delay only included stopped delay. Thus, the level of service criteria listed in Table A-V differs from earlier criteria.

Unsignalized Intersections

The current procedures on unsignalized intersections were first introduced in the 1997 update to the *Highway Capacity Manual* and represent a revision of the methodology published in the 1994 update to the 1985 *Highway Capacity Manual*. The revised procedures use control delay as a measure of effectiveness to determine level of service. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, *i. e.*, in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

Two-Way Stop Controlled Intersections

Two-way stop controlled intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At two-way stop-controlled intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A level of service designation is given to the expected control delay for each minor movement. Level of service is not defined for the intersection as a whole. Control delay is the increased time of travel for a vehicle approaching and passing through a stop-controlled intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection. A description of levels of service for two-way stop-controlled intersections is found in Table A-VI.

Table A-VI: Description of Level of Service for Two-Way Stop Controlled Intersections

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: Highway Capacity Manual 2000

Appendix B: Intersection Turning Movement Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: #1 - SR-65 & 1st St
City: Wheatland
Control: Signalized

Project ID: 23-070185-001
Date: 9/12/2023

Data - Total

NS/EW Streets:	SR-65				SR-65				1st St				1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	12	228	0	0	0	225	1	0	6	2	9	0	1	2	3	0	489
7:15 AM	12	231	0	0	0	231	4	0	12	1	10	0	0	1	2	0	504
7:30 AM	33	204	0	0	1	193	3	0	31	3	25	0	0	1	1	0	495
7:45 AM	35	186	0	0	2	185	8	0	38	1	17	0	1	6	1	0	480
8:00 AM	23	208	0	0	0	190	8	0	55	1	12	0	1	1	1	0	500
8:15 AM	7	154	1	0	0	230	2	0	25	2	15	0	1	0	0	0	437
8:30 AM	6	164	0	0	0	181	5	0	25	0	12	0	0	0	6	0	399
8:45 AM	5	150	0	0	1	155	4	0	6	0	16	0	1	0	4	0	342
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	133	1525	1	0	4	1590	35	0	198	10	116	0	5	11	18	0	3646
APPROACH %'s :	8.02%	91.92%	0.06%	0.00%	0.25%	97.61%	2.15%	0.00%	61.11%	3.09%	35.80%	0.00%	14.71%	32.35%	52.94%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	103	829	0	0	3	799	23	0	136	6	64	0	2	9	5	0	1979
PEAK HR FACTOR :	0.736	0.897	0.000	0.000	0.375	0.865	0.719	0.000	0.618	0.500	0.640	0.000	0.500	0.375	0.625	0.000	0.982
	0.959				0.878				0.757				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	17	221	2	0	0	206	2	0	30	1	23	0	1	0	5	0	508
4:15 PM	19	211	1	0	0	204	6	0	21	1	26	0	3	3	6	0	501
4:30 PM	12	237	0	0	1	233	3	0	20	2	17	0	0	0	2	0	527
4:45 PM	10	228	0	0	3	218	2	0	7	0	17	0	0	0	7	0	492
5:00 PM	5	234	1	0	3	243	3	0	9	1	13	0	2	0	4	0	518
5:15 PM	9	240	0	0	1	237	3	0	7	1	18	0	1	1	3	0	521
5:30 PM	14	230	1	0	1	211	8	0	12	2	14	0	4	2	2	0	501
5:45 PM	8	250	4	0	1	175	8	0	23	0	20	0	0	1	1	0	491
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	94	1851	9	0	10	1727	35	0	129	8	148	0	11	7	30	0	4059
APPROACH %'s :	4.81%	94.73%	0.46%	0.00%	0.56%	97.46%	1.98%	0.00%	45.26%	2.81%	51.93%	0.00%	22.92%	14.58%	62.50%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	36	939	1	0	8	931	11	0	43	4	65	0	3	1	16	0	2058
PEAK HR FACTOR :	0.750	0.978	0.250	0.000	0.667	0.958	0.917	0.000	0.538	0.500	0.903	0.000	0.375	0.250	0.571	0.000	0.976
	0.980				0.954				0.718				0.714				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #1 - SR-65 & 1st St
City: Wheatland
Control: Signalized

Project ID: 23-070185-001
Date: 9/12/2023

Data - Cars

NS/EW Streets:	SR-65				SR-65				1st St				1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	11	211	0	0	0	193	1	0	6	2	8	0	1	2	3	0	438
7:15 AM	10	221	0	0	0	213	4	0	12	1	10	0	0	1	2	0	474
7:30 AM	33	176	0	0	1	174	2	0	29	3	25	0	0	1	1	0	445
7:45 AM	35	171	0	0	2	170	7	0	38	1	17	0	1	6	0	0	448
8:00 AM	23	189	0	0	0	176	8	0	53	1	12	0	1	1	1	0	465
8:15 AM	7	133	1	0	0	209	2	0	25	2	15	0	1	0	0	0	395
8:30 AM	6	141	0	0	0	168	5	0	22	0	12	0	0	0	6	0	360
8:45 AM	5	139	0	0	1	140	3	0	5	0	14	0	1	0	4	0	312
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	130	1381	1	0	4	1443	32	0	190	10	113	0	5	11	17	0	3337
APPROACH %'s :	8.60%	91.34%	0.07%	0.00%	0.27%	97.57%	2.16%	0.00%	60.70%	3.19%	36.10%	0.00%	15.15%	33.33%	51.52%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	101	757	0	0	3	733	21	0	132	6	64	0	2	9	4	0	1832
PEAK HR FACTOR :	0.721	0.856	0.000	0.000	0.375	0.860	0.656	0.000	0.623	0.500	0.640	0.000	0.500	0.375	0.500	0.000	0.966
	0.929				0.872				0.765				0.536				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	16	210	2	0	0	202	2	0	28	1	23	0	1	0	5	0	490
4:15 PM	19	198	1	0	0	195	6	0	21	1	25	0	3	3	6	0	478
4:30 PM	11	220	0	0	1	219	3	0	20	2	15	0	0	0	2	0	493
4:45 PM	10	218	0	0	3	211	2	0	7	0	17	0	0	0	7	0	475
5:00 PM	5	230	1	0	3	231	3	0	9	1	12	0	2	0	3	0	500
5:15 PM	9	232	0	0	1	233	3	0	7	1	18	0	1	1	3	0	509
5:30 PM	14	227	1	0	1	204	8	0	12	2	14	0	4	2	2	0	491
5:45 PM	8	246	4	0	1	173	8	0	23	0	20	0	0	1	0	0	484
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	92	1781	9	0	10	1668	35	0	127	8	144	0	11	7	28	0	3920
APPROACH %'s :	4.89%	94.63%	0.48%	0.00%	0.58%	97.37%	2.04%	0.00%	45.52%	2.87%	51.61%	0.00%	23.91%	15.22%	60.87%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	35	900	1	0	8	894	11	0	43	4	62	0	3	1	15	0	1977
PEAK HR FACTOR :	0.795	0.970	0.250	0.000	0.667	0.959	0.917	0.000	0.538	0.500	0.861	0.000	0.375	0.250	0.536	0.000	0.971
	0.971				0.963				0.736				0.679				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #1 - SR-65 & 1st St
City: Wheatland
Control: Signalized

Project ID: 23-070185-001
Date: 9/12/2023

Data - HT

NS/EW Streets:	SR-65				SR-65				1st St				1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	17	0	0	0	32	0	0	0	0	1	0	0	0	0	0	51
7:15 AM	2	10	0	0	0	18	0	0	0	0	0	0	0	0	0	0	30
7:30 AM	0	28	0	0	0	19	1	0	2	0	0	0	0	0	0	0	50
7:45 AM	0	15	0	0	0	15	1	0	0	0	0	0	0	0	1	0	32
8:00 AM	0	19	0	0	0	14	0	0	2	0	0	0	0	0	0	0	35
8:15 AM	0	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	42
8:30 AM	0	23	0	0	0	13	0	0	3	0	0	0	0	0	0	0	39
8:45 AM	0	11	0	0	0	15	1	0	1	0	2	0	0	0	0	0	30
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	144	0	0	0	147	3	0	8	0	3	0	0	0	1	0	309
APPROACH %'s :	2.04%	97.96%	0.00%	0.00%	0.00%	98.00%	2.00%	0.00%	72.73%	0.00%	27.27%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	2	72	0	0	0	66	2	0	4	0	0	0	0	0	1	0	147
PEAK HR FACTOR :	0.250	0.643	0.000	0.000	0.000	0.868	0.500	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.735
	0.661				0.850				0.500				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	11	0	0	0	4	0	0	2	0	0	0	0	0	0	0	18
4:15 PM	0	13	0	0	0	9	0	0	0	0	1	0	0	0	0	0	23
4:30 PM	1	17	0	0	0	14	0	0	0	0	2	0	0	0	0	0	34
4:45 PM	0	10	0	0	0	7	0	0	0	0	0	0	0	0	0	0	17
5:00 PM	0	4	0	0	0	12	0	0	0	0	1	0	0	0	1	0	18
5:15 PM	0	8	0	0	0	4	0	0	0	0	0	0	0	0	0	0	12
5:30 PM	0	3	0	0	0	7	0	0	0	0	0	0	0	0	0	0	10
5:45 PM	0	4	0	0	0	2	0	0	0	0	0	0	0	0	1	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	70	0	0	0	59	0	0	2	0	4	0	0	0	2	0	139
APPROACH %'s :	2.78%	97.22%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	39	0	0	0	37	0	0	0	0	3	0	0	0	1	0	81
PEAK HR FACTOR :	0.250	0.574	0.000	0.000	0.000	0.661	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.250	0.000	0.596
	0.556				0.661				0.375				0.250				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #1 - SR-65 & 1st St
City: Wheatland
Control: Signalized

Project ID: 23-070185-001
Date: 9/12/2023

Data - Bikes

NS/EW Streets:	SR-65				SR-65				1st St				1st St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4
APPROACH %'s :													0.00%	75.00%	25.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.375
														0.375			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: #1 - SR-65 & 1st St
City: Wheatland

Project ID: 23-070185-001
Date: 9/12/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	SR-65		SR-65		1st St		1st St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	1	0	0	0	2
7:45 AM	0	3	0	0	0	0	0	0	3
8:00 AM	1	0	0	1	0	1	0	0	3
8:15 AM	0	1	0	0	1	0	0	0	2
8:30 AM	1	1	0	0	0	1	0	0	3
8:45 AM	1	0	0	0	0	1	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	7	0	1	2	3	0	0	16
APPROACH %'s :	30.00%	70.00%	0.00%	100.00%	40.00%	60.00%			
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	1	5	0	1	1	1	0	0	9
PEAK HR FACTOR :	0.250	0.417		0.250	0.250	0.250			0.750
	0.500		0.250		0.500				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	2	0	0	0	0	2
4:15 PM	1	1	0	0	0	1	0	0	3
4:30 PM	0	1	0	0	0	0	0	0	1
4:45 PM	2	1	0	0	1	1	0	0	5
5:00 PM	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	1	0	0	0	0	2
5:45 PM	0	0	5	0	0	0	0	0	5
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	4	6	3	1	2	0	0	19
APPROACH %'s :	42.86%	57.14%	66.67%	33.33%	33.33%	66.67%			
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	2	3	0	0	1	1	0	0	7
PEAK HR FACTOR :	0.250	0.750			0.250	0.250			0.350
	0.417				0.250				

Prepared by National Data & Surveying Services

#1 - SR-65 & 1st St

Peak Hour Turning Movement Count

ID: 23-070185-001
City: Wheatland

Day: Tuesday
Date: 9/12/2023

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

SR-65

SOUTHBOUND

	↲	↓	↳	U	⇧
AM	23	799	3	0	970
NOON	0	0	0	0	0
PM	11	931	8	0	998
	0	1	1	0	

1st St

EASTBOUND

		AM	NOON	PM
⇦		135	0	48
U	0	0	0	0
↰	0	136	0	43
→	1	6	0	4
↱	0	64	0	65

1st St

WESTBOUND

		PM	NOON	AM
↱	0	16	0	5
←	1	1	0	9
↰	0	3	0	2
U	0	0	0	0
⇨		13	0	9

CONTROL

Signalized

	AM	NOON	PM
TEV	1979	0	2058
PHF	0.98		0.98

NORTHBOUND

SR-65

	⇩	U	↰	↑	↱
		0	1	1	0
PM	999	0	36	939	1
NOON	0	0	0	0	0
AM	865	0	103	829	0

Cars (AM)

Approach	Left	Thru	Right
Southbound	3	733	21
Eastbound	132	6	64
Westbound	2	9	4
Northbound	101	757	0

HT (AM)

Approach	Left	Thru	Right
Southbound	0	66	2
Eastbound	4	0	0
Westbound	0	0	1
Northbound	2	72	0

Cars (NOON)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

HT (NOON)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Cars (PM)

Approach	Left	Thru	Right
Southbound	8	894	11
Eastbound	43	4	62
Westbound	3	1	15
Northbound	35	900	1

HT (PM)

Approach	Left	Thru	Right
Southbound	0	37	0
Eastbound	0	0	3
Westbound	0	0	1
Northbound	1	39	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	→	1	0	2
North	←	5	0	3
West	↓	0	0	0
West	↑	0	0	0
East	↓	1	0	1
East	↑	1	0	1
South	→	0	0	0
South	←	1	0	0
Northwest diagonal	↘	0	0	0
Northeast diagonal	↙	0	0	0
Southwest diagonal	↗	0	0	0
Southeast diagonal	↖	0	0	0

Project ID: 23-070185-001
Location: #1 - SR-65 & 1st St
City: Wheatland

Day: Tuesday
Date: 9/12/2023

Groups Printed - Cars, PU, Vans - Heavy Trucks

	SR-65 Northbound						**SR-65 Southbound**						**1st St Eastbound**						**1st St Westbound**						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	12	228	0	0	0	240	0	225	1	0	0	226	6	2	9	0	0	17	1	2	3	0	0	6	489
7:15 AM	12	231	0	0	0	243	0	231	4	0	1	235	12	1	10	0	0	23	0	1	2	0	0	3	504
7:30 AM	33	204	0	0	0	237	1	193	3	0	1	197	31	3	25	0	0	59	0	1	1	0	1	2	495
7:45 AM	35	186	0	0	0	221	2	185	8	0	3	195	38	1	17	0	0	56	1	6	1	0	0	8	480
Total	92	849	0	0	0	941	3	834	16	0	5	853	87	7	61	0	0	155	2	10	7	0	1	19	1968
8:00 AM	23	208	0	0	1	231	0	190	8	0	1	198	55	1	12	0	0	68	1	1	1	0	1	3	500
8:15 AM	7	154	1	0	0	162	0	230	2	0	1	232	25	2	15	0	0	42	1	0	0	0	1	1	437
8:30 AM	6	164	0	0	0	170	0	181	5	0	2	186	25	0	12	0	0	37	0	0	6	0	1	6	399
8:45 AM	5	150	0	0	0	155	1	155	4	0	1	160	6	0	16	0	0	22	1	0	4	0	1	5	342
Total	41	676	1	0	1	718	1	756	19	0	5	776	111	3	55	0	0	169	3	1	11	0	4	15	1678
BREAK																									
4:00 PM	17	221	2	0	2	240	0	206	2	0	0	208	30	1	23	0	0	54	1	0	5	0	0	6	508
4:15 PM	19	211	1	0	0	231	0	204	6	0	2	210	21	1	26	0	0	48	3	3	6	0	1	12	501
4:30 PM	12	237	0	0	0	249	1	233	3	0	1	237	20	2	17	0	0	39	0	0	2	0	0	2	527
4:45 PM	10	228	0	0	0	238	3	218	2	0	3	223	7	0	17	0	0	24	0	0	7	0	2	7	492
Total	58	897	3	0	2	958	4	861	13	0	6	878	78	4	83	0	0	165	4	3	20	0	3	27	2028
5:00 PM	5	234	1	0	0	240	3	243	3	0	1	249	9	1	13	0	0	23	2	0	4	0	0	6	518
5:15 PM	9	240	0	0	0	249	1	237	3	0	0	241	7	1	18	0	0	26	1	1	3	0	0	5	521
5:30 PM	14	230	1	0	2	245	1	211	8	0	0	220	12	2	14	0	0	28	4	2	2	0	0	8	501
5:45 PM	8	250	4	0	5	262	1	175	8	0	0	184	23	0	20	0	0	43	0	1	1	0	0	2	491
Total	36	954	6	0	7	996	6	866	22	0	1	894	51	4	65	0	0	120	7	4	10	0	0	21	2031
Grand Total	227	3376	10	0	10	3613	14	3317	70	0	17	3401	327	18	264	0	0	609	16	18	48	0	8	82	7705
Apprch %	6.3	93.4	0.3	0.0	0.3		0.4	97.5	2.1	0.0	0.5		53.7	3.0	43.3	0.0	0.0		19.5	22.0	58.5	0.0	9.8		
Total %	2.9	43.8	0.1	0.0	0.1	46.9	0.2	43.0	0.9	0.0	0.2	44.1	4.2	0.2	3.4	0.0	0.0	7.9	0.2	0.2	0.6	0.0	0.1	1.1	
Cars, PU, Vans	222	3162	10	0		3394	14	3111	67	0		3192	317	18	257	0		592	16	18	45	0		79	7257
% Cars, PU, Vans	97.8	93.7	100.0	0.0		93.9	100.0	93.8	95.7	0.0		93.9	96.9	100.0	97.3	0.0		97.2	100.0	100.0	93.8	0.0		96.3	94.2
Heavy trucks	5	214	0	0		219	0	206	3	0		209	10	0	7	0		17	0	0	3	0		3	448
%Heavy trucks	2.2	6.3	0.0	0.0		6.1	0.0	6.2	4.3	0.0		6.1	3.1	0.0	2.7	0.0		2.8	0.0	0.0	6.3	0.0		3.7	5.8

Project ID: 23-070185-001
Location: #1 - SR-65 & 1st St
City: Wheatland

PEAK HOURS

Day: Tuesday
Date: 9/12/2023

AM

	SR-65 Northbound					**SR-65 Southbound**					**1st St Eastbound**					**1st St Westbound**					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
7:15 AM	12	231	0	0	243	0	231	4	0	235	12	1	10	0	23	0	1	2	0	3	504
7:30 AM	33	204	0	0	237	1	193	3	0	197	31	3	25	0	59	0	1	1	0	2	495
7:45 AM	35	186	0	0	221	2	185	8	0	195	38	1	17	0	56	1	6	1	0	8	480
8:00 AM	23	208	0	0	231	0	190	8	0	198	55	1	12	0	68	1	1	1	0	3	500
Total Volume	103	829	0	0	932	3	799	23	0	825	136	6	64	0	206	2	9	5	0	16	1979
% App. Total	11.1	88.9	0.0	0.0	100	0.4	96.8	2.8	0.0	100	66.0	2.9	31.1	0.0	100	12.5	56.3	31.3	0.0	100	
PHF					0.959					0.878					0.757					0.500	0.982
Cars, PU, Vans	101	757	0	0	858	3	733	21	0	757	132	6	64	0	202	2	9	4	0	15	1832
% Cars, PU, Vans	98.1	91.3	0.0	0.0	92.1	100.0	91.7	91.3	0.0	91.8	97.1	100.0	100.0	0.0	98.1	100.0	100.0	80.0	0.0	93.8	92.6
Heavy trucks	2	72	0	0	74	0	66	2	0	68	4	0	0	0	4	0	0	1	0	1	147
%Heavy trucks	1.9	8.7	0.0	0.0	7.9	0.0	8.3	8.7	0.0	8.2	2.9	0.0	0.0	0.0	1.9	0.0	0.0	20.0	0.0	6.3	7.4

PM

	SR-65 Northbound					**SR-65 Southbound**					**1st St Eastbound**					**1st St Westbound**					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	12	237	0	0	249	1	233	3	0	237	20	2	17	0	39	0	0	2	0	2	527
4:45 PM	10	228	0	0	238	3	218	2	0	223	7	0	17	0	24	0	0	7	0	7	492
5:00 PM	5	234	1	0	240	3	243	3	0	249	9	1	13	0	23	2	0	4	0	6	518
5:15 PM	9	240	0	0	249	1	237	3	0	241	7	1	18	0	26	1	1	3	0	5	521
Total Volume	36	939	1	0	976	8	931	11	0	950	43	4	65	0	112	3	1	16	0	20	2058
% App. Total	3.7	96.2	0.1	0.0	100	0.8	98.0	1.2	0.0	100	38.4	3.6	58.0	0.0	100	15.0	5.0	80.0	0.0	100	
PHF					0.980					0.954					0.718					0.714	0.976
Cars, PU, Vans	35	900	1	0	936	8	894	11	0	913	43	4	62	0	109	3	1	15	0	19	1977
% Cars, PU, Vans	97.2	95.8	100.0	0.0	95.9	100.0	96.0	100.0	0.0	96.1	100.0	100.0	95.4	0.0	97.3	100.0	100.0	93.8	0.0	95.0	96.1
Heavy trucks	1	39	0	0	40	0	37	0	0	37	0	0	3	0	3	0	0	1	0	1	81
%Heavy trucks	2.8	4.2	0.0	0.0	4.1	0.0	4.0	0.0	0.0	3.9	0.0	0.0	4.6	0.0	2.7	0.0	0.0	6.3	0.0	5.0	3.9

File Name: 23-070185-001
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				1st St Westbound				SR-65 Northbound				1st St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	489
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	993
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1488
7:00 AM	0	225	1	0	1	2	3	0	12	228	0	0	6	2	9	0	1968
7:15 AM	0	231	4	0	0	1	2	0	12	231	0	0	12	1	10	0	1979
7:30 AM	1	193	3	0	0	1	1	0	33	204	0	0	31	3	25	0	1912
7:45 AM	2	185	8	0	1	6	1	0	35	186	0	0	38	1	17	0	1816
8:00 AM	0	190	8	0	1	1	1	0	23	208	0	0	55	1	12	0	1678
8:15 AM	0	230	2	0	1	0	0	0	7	154	1	0	25	2	15	0	1178
8:30 AM	0	181	5	0	0	0	6	0	6	164	0	0	25	0	12	0	741
8:45 AM	1	155	4	0	1	0	4	0	5	150	0	0	6	0	16	0	342
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	508
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1009
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1536
4:00 PM	0	206	2	0	1	0	5	0	17	221	2	0	30	1	23	0	2028
4:15 PM	0	204	6	0	3	3	6	0	19	211	1	0	21	1	26	0	2038
4:30 PM	1	233	3	0	0	0	2	0	12	237	0	0	20	2	17	0	2058
4:45 PM	3	218	2	0	0	0	7	0	10	228	0	0	7	0	17	0	2032
5:00 PM	3	243	3	0	2	0	4	0	5	234	1	0	9	1	13	0	2031
5:15 PM	1	237	3	0	1	1	3	0	9	240	0	0	7	1	18	0	1513
5:30 PM	1	211	8	0	4	2	2	0	14	230	1	0	12	2	14	0	992
5:45 PM	1	175	8	0	0	1	1	0	8	250	4	0	23	0	20	0	491
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-001
Date : 9/12/2023

All Vehicles & Uturns

	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	225	1	0	226	1	2	3	0	6	12	228	0	0	240	6	2	9	0	17	489	0
7:15	0	231	4	0	235	0	1	2	0	3	12	231	0	0	243	12	1	10	0	23	504	0
7:30	1	193	3	0	197	0	1	1	0	2	33	204	0	0	237	31	3	25	0	59	495	0
7:45	2	185	8	0	195	1	6	1	0	8	35	186	0	0	221	38	1	17	0	56	480	0
Total	3	834	16	0	853	2	10	7	0	19	92	849	0	0	941	87	7	61	0	155	1968	0
8:00	0	190	8	0	198	1	1	1	0	3	23	208	0	0	231	55	1	12	0	68	500	0
8:15	0	230	2	0	232	1	0	0	0	1	7	154	1	0	162	25	2	15	0	42	437	0
8:30	0	181	5	0	186	0	0	6	0	6	6	164	0	0	170	25	0	12	0	37	399	0
8:45	1	155	4	0	160	1	0	4	0	5	5	150	0	0	155	6	0	16	0	22	342	0
Total	1	756	19	0	776	3	1	11	0	15	41	676	1	0	718	111	3	55	0	169	1678	0
16:00	0	206	2	0	208	1	0	5	0	6	17	221	2	0	240	30	1	23	0	54	508	0
16:15	0	204	6	0	210	3	3	6	0	12	19	211	1	0	231	21	1	26	0	48	501	0
16:30	1	233	3	0	237	0	0	2	0	2	12	237	0	0	249	20	2	17	0	39	527	0
16:45	3	218	2	0	223	0	0	7	0	7	10	228	0	0	238	7	0	17	0	24	492	0
Total	4	861	13	0	878	4	3	20	0	27	58	897	3	0	958	78	4	83	0	165	2028	0
17:00	3	243	3	0	249	2	0	4	0	6	5	234	1	0	240	9	1	13	0	23	518	0
17:15	1	237	3	0	241	1	1	3	0	5	9	240	0	0	249	7	1	18	0	26	521	0
17:30	1	211	8	0	220	4	2	2	0	8	14	230	1	0	245	12	2	14	0	28	501	0
17:45	1	175	8	0	184	0	1	1	0	2	8	250	4	0	262	23	0	20	0	43	491	0
Total	6	866	22	0	894	7	4	10	0	21	36	954	6	0	996	51	4	65	0	120	2031	0
Grand Total	14	3317	70	0	3401	16	18	48	0	82	227	3376	10	0	3613	327	18	264	0	609	7705	0
Apprch %	0.4%	97.5%	2.1%	0.0%		19.5%	22.0%	58.5%	0.0%		6.3%	93.4%	0.3%	0.0%		53.7%	3.0%	43.3%	0.0%			
Total %	0.2%	43.0%	0.9%	0.0%	44.1%	0.2%	0.2%	0.6%	0.0%	1.1%	2.9%	43.8%	0.1%	0.0%	46.9%	4.2%	0.2%	3.4%	0.0%	7.9%	100.0%	

AM PEAK HOUR	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	231	4	0	235	0	1	2	0	3	12	231	0	0	243	12	1	10	0	23	504
7:30	1	193	3	0	197	0	1	1	0	2	33	204	0	0	237	31	3	25	0	59	495
7:45	2	185	8	0	195	1	6	1	0	8	35	186	0	0	221	38	1	17	0	56	480
8:00	0	190	8	0	198	1	1	1	0	3	23	208	0	0	231	55	1	12	0	68	500
Total Volume	3	799	23	0	825	2	9	5	0	16	103	829	0	0	932	136	6	64	0	206	1979
% App Total	0.4%	96.8%	2.8%	0.0%		12.5%	56.3%	31.3%	0.0%		11.1%	88.9%	0.0%	0.0%		66.0%	2.9%	31.1%	0.0%		
PHF	.375	.865	.719	.000	.878	.500	.375	.625	.000	.500	.736	.897	.000	.000	.959	.618	.500	.640	.000	.757	.982

PM PEAK HOUR	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	1	233	3	0	237	0	0	2	0	2	12	237	0	0	249	20	2	17	0	39	527
16:45	3	218	2	0	223	0	0	7	0	7	10	228	0	0	238	7	0	17	0	24	492
17:00	3	243	3	0	249	2	0	4	0	6	5	234	1	0	240	9	1	13	0	23	518
17:15	1	237	3	0	241	1	1	3	0	5	9	240	0	0	249	7	1	18	0	26	521
Total Volume	8	931	11	0	950	3	1	16	0	20	36	939	1	0	976	43	4	65	0	112	2058
% App Total	0.8%	98.0%	1.2%	0.0%		15.0%	5.0%	80.0%	0.0%		3.7%	96.2%	0.1%	0.0%		38.4%	3.6%	58.0%	0.0%		
PHF	.667	.958	.917	.000	.954	.375	.250	.571	.000	.714	.750	.978	.250	.000	.980	.538	.500	.903	.000	.718	.976

File Name: 23-070185-001
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				1st St Westbound				SR-65 Northbound				1st St Eastbound				
Start Time	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	2
8:15 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1
4:15 PM	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-001
Date : 9/12/2023

All Bikes and Peds

	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1
7:30	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	5	0	0	2	0	1	2	0	0	0	0	0	0	0	0	0	0	2	6
8:00	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	1	3
8:15	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
8:45	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	2
Total	0	0	0	5	0	0	1	1	4	2	0	0	0	1	0	0	0	0	0	0	2	10
16:00	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	2
16:15	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	1	0	0	6	1	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	1	11
17:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	8
Grand Total	1	0	0	17	1	0	3	1	8	4	0	0	0	10	0	0	0	0	0	0	5	35
Apprch %	100.0%	0.0%	0.0%			0.0%	75.0%	25.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	20.0%	0.0%	0.0%		20.0%	0.0%	60.0%	20.0%		80.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:30	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	1
Total Volume	0	0	0	6	0	0	3	0	2	3	0	0	0	1	0	0	0	0	0	0	3
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.375	.000		.375	.000	.000	.000		.000	.000	.000	.000		.000	.375

PM PEAK HOUR	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

File Name: 23-070185-001
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				1st St Westbound				SR-65 Northbound				1st St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131
7:00 AM	0	32	0	0	0	0	0	0	1	17	0	0	0	0	1	0	163
7:15 AM	0	18	0	0	0	0	0	0	2	10	0	0	0	0	0	0	147
7:30 AM	0	19	1	0	0	0	0	0	0	28	0	0	2	0	0	0	159
7:45 AM	0	15	1	0	0	0	1	0	0	15	0	0	0	0	0	0	148
8:00 AM	0	14	0	0	0	0	0	0	0	19	0	0	2	0	0	0	146
8:15 AM	0	21	0	0	0	0	0	0	0	21	0	0	0	0	0	0	111
8:30 AM	0	13	0	0	0	0	0	0	0	23	0	0	3	0	0	0	69
8:45 AM	0	15	1	0	0	0	0	0	0	11	0	0	1	0	2	0	30
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75
4:00 PM	0	4	0	0	0	0	0	0	1	11	0	0	2	0	0	0	92
4:15 PM	0	9	0	0	0	0	0	0	0	13	0	0	0	0	1	0	92
4:30 PM	0	14	0	0	0	0	0	0	1	17	0	0	0	0	2	0	81
4:45 PM	0	7	0	0	0	0	0	0	0	10	0	0	0	0	0	0	57
5:00 PM	0	12	0	0	0	0	1	0	0	4	0	0	0	0	1	0	47
5:15 PM	0	4	0	0	0	0	0	0	0	8	0	0	0	0	0	0	29
5:30 PM	0	7	0	0	0	0	0	0	0	3	0	0	0	0	0	0	17
5:45 PM	0	2	0	0	0	0	1	0	0	4	0	0	0	0	0	0	7
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-001
Date : 9/12/2023

All HT & Uturns

	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	32	0	0	32	0	0	0	0	0	1	17	0	0	18	0	0	1	0	1	51	0
7:15	0	18	0	0	18	0	0	0	0	0	2	10	0	0	12	0	0	0	0	0	30	0
7:30	0	19	1	0	20	0	0	0	0	0	0	28	0	0	28	2	0	0	0	2	50	0
7:45	0	15	1	0	16	0	0	1	0	1	0	15	0	0	15	0	0	0	0	0	32	0
Total	0	84	2	0	86	0	0	1	0	1	3	70	0	0	73	2	0	1	0	3	163	0
8:00	0	14	0	0	14	0	0	0	0	0	0	19	0	0	19	2	0	0	0	2	35	0
8:15	0	21	0	0	21	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	42	0
8:30	0	13	0	0	13	0	0	0	0	0	0	23	0	0	23	3	0	0	0	3	39	0
8:45	0	15	1	0	16	0	0	0	0	0	0	11	0	0	11	1	0	2	0	3	30	0
Total	0	63	1	0	64	0	0	0	0	0	0	74	0	0	74	6	0	2	0	8	146	0
16:00	0	4	0	0	4	0	0	0	0	0	1	11	0	0	12	2	0	0	0	2	18	0
16:15	0	9	0	0	9	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	23	0
16:30	0	14	0	0	14	0	0	0	0	0	1	17	0	0	18	0	0	2	0	2	34	0
16:45	0	7	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17	0
Total	0	34	0	0	34	0	0	0	0	0	2	51	0	0	53	2	0	3	0	5	92	0
17:00	0	12	0	0	12	0	0	1	0	1	0	4	0	0	4	0	0	1	0	1	18	0
17:15	0	4	0	0	4	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	12	0
17:30	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	10	0
17:45	0	2	0	0	2	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	7	0
Total	0	25	0	0	25	0	0	2	0	2	0	19	0	0	19	0	0	1	0	1	47	0
Grand Total	0	206	3	0	209	0	0	3	0	3	5	214	0	0	219	10	0	7	0	17	448	0
Apprch %	0.0%	98.6%	1.4%	0.0%		0.0%	0.0%	100.0%	0.0%		2.3%	97.7%	0.0%	0.0%		58.8%	0.0%	41.2%	0.0%			
Total %	0.0%	46.0%	0.7%	0.0%	46.7%	0.0%	0.0%	0.7%	0.0%	0.7%	1.1%	47.8%	0.0%	0.0%	48.9%	2.2%	0.0%	1.6%	0.0%	3.8%	100.0%	

AM PEAK HOUR	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
7:15	0	18	0	0	18	0	0	0	0	0	2	10	0	0	12	0	0	0	0	0	30
7:30	0	19	1	0	20	0	0	0	0	0	0	28	0	0	28	2	0	0	0	2	50
7:45	0	15	1	0	16	0	0	1	0	1	0	15	0	0	15	0	0	0	0	0	32
8:00	0	14	0	0	14	0	0	0	0	0	0	19	0	0	19	2	0	0	0	2	35
Total Volume	0	66	2	0	68	0	0	1	0	1	2	72	0	0	74	4	0	0	0	4	147
% App Total	0.0%	97.1%	2.9%	0.0%		0.0%	0.0%	100.0%	0.0%		2.7%	97.3%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		
PHF	.000	.868	.500	.000	.850	.000	.000	.250	.000	.250	.250	.643	.000	.000	.661	.500	.000	.000	.000	.500	.735

PM PEAK HOUR	SR-65 Southbound					1st St Westbound					SR-65 Northbound					1st St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	14	0	0	14	0	0	0	0	0	1	17	0	0	18	0	0	2	0	2	34
16:45	0	7	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17
17:00	0	12	0	0	12	0	0	1	0	1	0	4	0	0	4	0	0	1	0	1	18
17:15	0	4	0	0	4	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	12
Total Volume	0	37	0	0	37	0	0	1	0	1	1	39	0	0	40	0	0	3	0	3	81
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		2.5%	97.5%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.000	.661	.000	.000	.661	.000	.000	.250	.000	.250	.250	.574	.000	.000	.556	.000	.000	.375	.000	.375	.596

National Data & Surveying Services

Intersection Turning Movement Count

Location: #2 - SR-65 & 2nd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-002
Date: 9/12/2023

Data - Total

NS/EW Streets:	SR-65				SR-65				2nd St				2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	244	1	0	2	238	0	0	0	0	1	0	2	2	2	0	499
7:15 AM	14	245	0	0	2	239	0	0	0	0	1	0	0	0	4	0	505
7:30 AM	16	234	2	0	4	216	0	0	0	0	0	0	3	1	8	0	484
7:45 AM	16	204	1	0	13	190	0	0	0	2	10	0	0	0	11	0	447
8:00 AM	12	217	1	0	7	195	0	0	0	0	8	0	1	0	5	0	446
8:15 AM	3	161	1	0	9	231	0	0	1	0	1	0	0	0	5	0	412
8:30 AM	4	161	3	0	3	194	0	0	1	0	0	0	0	0	6	0	372
8:45 AM	3	157	2	0	6	164	2	0	0	0	3	0	1	0	1	0	339
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	75	1623	11	0	46	1667	2	0	2	2	24	0	7	3	42	0	3504
APPROACH %'s :	4.39%	94.97%	0.64%	0.00%	2.68%	97.20%	0.12%	0.00%	7.14%	7.14%	85.71%	0.00%	13.46%	5.77%	80.77%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	53	927	4	0	21	883	0	0	0	2	12	0	5	3	25	0	1935
PEAK HR FACTOR :	0.828	0.946	0.500	0.000	0.404	0.924	0.000	0.000	0.000	0.250	0.300	0.000	0.417	0.375	0.568	0.000	
	0.950				0.938				0.292				0.688				0.958

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	238	1	0	6	221	2	0	0	0	4	0	0	1	6	0	484
4:15 PM	5	232	2	0	8	227	0	0	0	0	2	0	2	0	4	0	482
4:30 PM	9	244	2	0	3	243	0	0	0	0	2	0	0	0	2	0	505
4:45 PM	8	240	3	0	7	229	0	0	0	0	1	0	0	0	6	0	494
5:00 PM	5	230	0	0	3	254	0	0	0	0	1	0	1	0	6	0	500
5:15 PM	8	246	2	0	10	248	0	0	1	0	1	0	1	0	6	0	523
5:30 PM	15	245	1	0	4	218	1	0	0	0	2	0	1	0	3	0	490
5:45 PM	10	257	1	0	7	189	2	0	0	0	0	0	1	1	3	0	471
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	65	1932	12	0	48	1829	5	0	1	0	13	0	6	2	36	0	3949
APPROACH %'s :	3.24%	96.17%	0.60%	0.00%	2.55%	97.18%	0.27%	0.00%	7.14%	0.00%	92.86%	0.00%	13.64%	4.55%	81.82%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	30	960	7	0	23	974	0	0	1	0	5	0	2	0	20	0	2022
PEAK HR FACTOR :	0.833	0.976	0.583	0.000	0.575	0.959	0.000	0.000	0.250	0.000	0.625	0.000	0.500	0.000	0.833	0.000	
	0.974				0.966				0.750				0.786				0.967

National Data & Surveying Services

Intersection Turning Movement Count

Location: #2 - SR-65 & 2nd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-002
Date: 9/12/2023

Data - Cars

NS/EW Streets:	SR-65				SR-65				2nd St				2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	228	1	0	2	205	0	0	0	0	1	0	2	2	2	0	450
7:15 AM	14	233	0	0	2	223	0	0	0	0	1	0	0	0	4	0	477
7:30 AM	16	206	2	0	4	197	0	0	0	0	0	0	3	1	8	0	437
7:45 AM	16	189	1	0	13	173	0	0	0	2	10	0	0	0	11	0	415
8:00 AM	12	198	1	0	7	181	0	0	0	0	8	0	1	0	5	0	413
8:15 AM	2	140	1	0	9	211	0	0	1	0	1	0	0	0	4	0	369
8:30 AM	4	139	3	0	3	180	0	0	1	0	0	0	0	0	6	0	336
8:45 AM	3	146	2	0	6	147	2	0	0	0	3	0	1	0	1	0	311
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	74	1479	11	0	46	1517	2	0	2	2	24	0	7	3	41	0	3208
APPROACH %'s :	4.73%	94.57%	0.70%	0.00%	2.94%	96.93%	0.13%	0.00%	7.14%	7.14%	85.71%	0.00%	13.73%	5.88%	80.39%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	53	856	4	0	21	798	0	0	0	2	12	0	5	3	25	0	1779
PEAK HR FACTOR :	0.828	0.918	0.500	0.000	0.404	0.895	0.000	0.000	0.000	0.250	0.300	0.000	0.417	0.375	0.568	0.000	0.932
	0.924				0.910				0.292				0.688				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	226	1	0	6	217	2	0	0	0	4	0	0	1	6	0	468
4:15 PM	5	217	2	0	8	217	0	0	0	0	2	0	2	0	4	0	457
4:30 PM	9	229	2	0	3	227	0	0	0	0	2	0	0	0	1	0	473
4:45 PM	8	230	3	0	7	222	0	0	0	0	1	0	0	0	6	0	477
5:00 PM	4	224	0	0	3	242	0	0	0	0	1	0	1	0	6	0	481
5:15 PM	8	240	2	0	10	243	0	0	1	0	1	0	1	0	6	0	512
5:30 PM	15	241	1	0	4	209	1	0	0	0	2	0	1	0	3	0	477
5:45 PM	10	252	1	0	7	187	2	0	0	0	0	0	1	1	3	0	464
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	64	1859	12	0	48	1764	5	0	1	0	13	0	6	2	35	0	3809
APPROACH %'s :	3.31%	96.07%	0.62%	0.00%	2.64%	97.08%	0.28%	0.00%	7.14%	0.00%	92.86%	0.00%	13.95%	4.65%	81.40%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	29	923	7	0	23	934	0	0	1	0	5	0	2	0	19	0	1943
PEAK HR FACTOR :	0.806	0.961	0.583	0.000	0.575	0.961	0.000	0.000	0.250	0.000	0.625	0.000	0.500	0.000	0.792	0.000	0.949
	0.959				0.946				0.750				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #2 - SR-65 & 2nd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-002
Date: 9/12/2023

Data - HT

NS/EW Streets:	SR-65				SR-65				2nd St				2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	16	0	0	0	33	0	0	0	0	0	0	0	0	0	0	49
7:15 AM	0	12	0	0	0	16	0	0	0	0	0	0	0	0	0	0	28
7:30 AM	0	28	0	0	0	19	0	0	0	0	0	0	0	0	0	0	47
7:45 AM	0	15	0	0	0	17	0	0	0	0	0	0	0	0	0	0	32
8:00 AM	0	19	0	0	0	14	0	0	0	0	0	0	0	0	0	0	33
8:15 AM	1	21	0	0	0	20	0	0	0	0	0	0	0	0	1	0	43
8:30 AM	0	22	0	0	0	14	0	0	0	0	0	0	0	0	0	0	36
8:45 AM	0	11	0	0	0	17	0	0	0	0	0	0	0	0	0	0	28
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	144	0	0	0	150	0	0	0	0	0	0	0	0	1	0	296
APPROACH %'s :	0.69%	99.31%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	71	0	0	0	85	0	0	0	0	0	0	0	0	0	0	156
PEAK HR FACTOR :	0.000	0.634	0.000	0.000	0.000	0.644	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.796
	0.634				0.644												

	SR-65				SR-65				2nd St				2nd St				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	12	0	0	0	4	0	0	0	0	0	0	0	0	0	0	16
4:15 PM	0	15	0	0	0	10	0	0	0	0	0	0	0	0	0	0	25
4:30 PM	0	15	0	0	0	16	0	0	0	0	0	0	0	0	1	0	32
4:45 PM	0	10	0	0	0	7	0	0	0	0	0	0	0	0	0	0	17
5:00 PM	1	6	0	0	0	12	0	0	0	0	0	0	0	0	0	0	19
5:15 PM	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11
5:30 PM	0	4	0	0	0	9	0	0	0	0	0	0	0	0	0	0	13
5:45 PM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	73	0	0	0	65	0	0	0	0	0	0	0	0	1	0	140
APPROACH %'s :	1.35%	98.65%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	37	0	0	0	40	0	0	0	0	0	0	0	0	1	0	79
PEAK HR FACTOR :	0.250	0.617	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.617
	0.633				0.625								0.250				

Intersection Turning Movement Count

Location: #2 - SR-65 & 2nd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-002
Date: 9/12/2023

Data - Bikes

NS/EW Streets:	SR-65				SR-65				2nd St				2nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%													
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: #2 - SR-65 & 2nd St
City: Wheatland

Project ID: 23-070185-002
Date: 9/12/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	SR-65		SR-65		2nd St		2nd St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	1	0	0	0	1
7:45 AM	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	1	0	1	2
8:15 AM	0	0	0	0	1	0	1	0	2
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	1	0	0	2	1	2	1	7
APPROACH %'s :	0.00%	100.00%			66.67%	33.33%	66.67%	33.33%	
PEAK HR :	**07:00 AM - 08:00 AM**								TOTAL
PEAK HR VOL :	0	1	0	0	1	0	1	0	3
PEAK HR FACTOR :		0.250			0.250		0.250		0.750
	0.250				0.250		0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	1	2
5:45 PM	0	0	0	0	0	5	0	0	5
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	5	2	1	8
APPROACH %'s :					0.00%	100.00%	66.67%	33.33%	
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

#2 - SR-65 & 2nd St

Peak Hour Turning Movement Count

ID: 23-070185-002
City: Wheatland

Day: Tuesday
Date: 9/12/2023

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

SR-65 — SOUTHBOUND

	↲	↓	↳	U	⇧
AM	0	883	21	0	952
NOON	0	0	0	0	0
PM	0	974	23	0	981
Lanes	0	1	1	0	

2nd St — EASTBOUND

	Lanes	AM	NOON	PM
⇦		56	0	30
U	0	0	0	0
↱	0	0	0	1
→	1	2	0	0
↴	0	12	0	5

2nd St — WESTBOUND

	Lanes	PM	NOON	AM
↰	0	20	0	25
←	1	0	0	3
↙	0	2	0	5
U	0	0	0	0
⇨		30	0	27

SR-65 — NORTHBOUND

	⇩	U	↰	↑	↱
Lanes		0	1	1	0
PM	981	0	30	960	7
NOON	0	0	0	0	0
AM	900	0	53	927	4

CONTROL

2-Way Stop(EB/WB)

	AM	NOON	PM
TEV	1935	0	2022
PHF	0.96		0.97

Cars (AM)

	Right	Thru	Left
SB	0	798	21
WB	25	3	5
NB	4	856	53
EB	12	2	0

HT (AM)

	Right	Thru	Left
SB	0	85	0
WB	0	0	0
NB	0	71	0
EB	0	0	0

Cars (NOON)

	Right	Thru	Left
SB	0	0	0
WB	0	0	0
NB	0	0	0
EB	0	0	0

HT (NOON)

	Right	Thru	Left
SB	0	0	0
WB	0	0	0
NB	0	0	0
EB	0	0	0

Cars (PM)

	Right	Thru	Left
SB	0	934	23
WB	19	0	2
NB	7	923	29
EB	5	0	1

HT (PM)

	Right	Thru	Left
SB	0	40	0
WB	1	0	0
NB	0	37	1
EB	0	0	0

Pedestrians (Crosswalks)

	AM	NOON	PM
North ↘	0	0	0
North →	0	0	0
North ←	1	0	0
North ↙	0	0	0
West ↓	0	0	0
West ↑	1	0	0
East ↓	0	0	0
East ↑	1	0	0
South ↗	0	0	0
South →	0	0	0
South ←	0	0	0
South ↖	0	0	0

Project ID: 23-070185-002
Location: #2 - SR-65 & 2nd St
City: Wheatland

Day: Tuesday
Date: 9/12/2023

Groups Printed - Cars, PU, Vans - Heavy Trucks

	SR-65 Northbound						**SR-65 Southbound**						**2nd St Eastbound**						**2nd St Westbound**						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	7	244	1	0	0	252	2	238	0	0	0	240	0	0	1	0	1	1	2	2	2	0	0	6	499
7:15 AM	14	245	0	0	0	259	2	239	0	0	0	241	0	0	1	0	0	1	0	0	4	0	0	4	505
7:30 AM	16	234	2	0	0	252	4	216	0	0	0	220	0	0	0	0	0	0	3	1	8	0	1	12	484
7:45 AM	16	204	1	0	0	221	13	190	0	0	1	203	0	2	10	0	0	12	0	0	11	0	0	11	447
Total	53	927	4	0	0	984	21	883	0	0	1	904	0	2	12	0	1	14	5	3	25	0	1	33	1935
8:00 AM	12	217	1	0	0	230	7	195	0	0	0	202	0	0	8	0	1	8	1	0	5	0	1	6	446
8:15 AM	3	161	1	0	0	165	9	231	0	0	0	240	1	0	1	0	1	2	0	0	5	0	1	5	412
8:30 AM	4	161	3	0	0	168	3	194	0	0	0	197	1	0	0	0	0	1	0	0	6	0	0	6	372
8:45 AM	3	157	2	0	0	162	6	164	2	0	0	172	0	0	3	0	0	3	1	0	1	0	0	2	339
Total	22	696	7	0	0	725	25	784	2	0	0	811	2	0	12	0	2	14	2	0	17	0	2	19	1569
BREAK																									
4:00 PM	5	238	1	0	0	244	6	221	2	0	0	229	0	0	4	0	1	4	0	1	6	0	0	7	484
4:15 PM	5	232	2	0	0	239	8	227	0	0	0	235	0	0	2	0	0	2	2	0	4	0	0	6	482
4:30 PM	9	244	2	0	0	255	3	243	0	0	0	246	0	0	2	0	0	2	0	0	2	0	0	2	505
4:45 PM	8	240	3	0	0	251	7	229	0	0	0	236	0	0	1	0	0	1	0	0	6	0	0	6	494
Total	27	954	8	0	0	989	24	920	2	0	0	946	0	0	9	0	1	9	2	1	18	0	0	21	1965
5:00 PM	5	230	0	0	0	235	3	254	0	0	0	257	0	0	1	0	0	1	1	0	6	0	0	7	500
5:15 PM	8	246	2	0	0	256	10	248	0	0	0	258	1	0	1	0	0	2	1	0	6	0	0	7	523
5:30 PM	15	245	1	0	0	261	4	218	1	0	0	223	0	0	2	0	2	2	1	0	3	0	0	4	490
5:45 PM	10	257	1	0	0	268	7	189	2	0	0	198	0	0	0	0	0	0	1	1	3	0	5	5	471
Total	38	978	4	0	0	1020	24	909	3	0	0	936	1	0	4	0	2	5	4	1	18	0	5	23	1984
Grand Total	140	3555	23	0	0	3718	94	3496	7	0	1	3597	3	2	37	0	6	42	13	5	78	0	8	96	7453
Apprch %	3.8	95.6	0.6	0.0	0.0		2.6	97.2	0.2	0.0	0.0		7.1	4.8	88.1	0.0	14.3		13.5	5.2	81.3	0.0	8.3		
Total %	1.9	47.7	0.3	0.0	0.0	49.9	1.3	46.9	0.1	0.0	0.0	48.3	0.0	0.0	0.5	0.0	0.1	0.6	0.2	0.1	1.0	0.0	0.1	1.3	
Cars, PU, Vans	138	3338	23	0		3499	94	3281	7	0		3382	3	2	37	0		42	13	5	76	0		94	7017
% Cars, PU, Vans	98.6	93.9	100.0	0.0		94.1	100.0	93.9	100.0	0.0		94.0	100.0	100.0	100.0	0.0		100.0	100.0	100.0	97.4	0.0		97.9	94.2
Heavy trucks	2	217	0	0		219	0	215	0	0		215	0	0	0	0		0	0	0	2	0		2	436
%Heavy trucks	1.4	6.1	0.0	0.0		5.9	0.0	6.1	0.0	0.0		6.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	2.6	0.0		2.1	5.8

Project ID: 23-070185-002
Location: #2 - SR-65 & 2nd St
City: Wheatland

PEAK HOURS

Day: Tuesday
Date: 9/12/2023

AM

	SR-65 Northbound					SR-65 Southbound					2nd St Eastbound					2nd St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
7:00 AM	7	244	1	0	252	2	238	0	0	240	0	0	1	0	1	2	2	2	0	6	499
7:15 AM	14	245	0	0	259	2	239	0	0	241	0	0	1	0	1	0	0	4	0	4	505
7:30 AM	16	234	2	0	252	4	216	0	0	220	0	0	0	0	0	3	1	8	0	12	484
7:45 AM	16	204	1	0	221	13	190	0	0	203	0	2	10	0	12	0	0	11	0	11	447
Total Volume	53	927	4	0	984	21	883	0	0	904	0	2	12	0	14	5	3	25	0	33	1935
% App. Total	5.4	94.2	0.4	0.0	100	2.3	97.7	0.0	0.0	100	0.0	14.3	85.7	0.0	100	15.2	9.1	75.8	0.0	100	
PHF					0.950					0.938					0.292					0.688	0.958
Cars, PU, Vans	53	856	4	0	913	21	798	0	0	819	0	2	12	0	14	5	3	25	0	33	1779
% Cars, PU, Vans	100.0	92.3	100.0	0.0	92.8	100.0	90.4	0.0	0.0	90.6	0.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	91.9
Heavy trucks	0	71	0	0	71	0	85	0	0	85	0	0	0	0	0	0	0	0	0	0	156
%Heavy trucks	0.0	7.7	0.0	0.0	7.2	0.0	9.6	0.0	0.0	9.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1

PM

	SR-65 Northbound					SR-65 Southbound					2nd St Eastbound					2nd St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	9	244	2	0	255	3	243	0	0	246	0	0	2	0	2	0	0	2	0	2	505
4:45 PM	8	240	3	0	251	7	229	0	0	236	0	0	1	0	1	0	0	6	0	6	494
5:00 PM	5	230	0	0	235	3	254	0	0	257	0	0	1	0	1	1	0	6	0	7	500
5:15 PM	8	246	2	0	256	10	248	0	0	258	1	0	1	0	2	1	0	6	0	7	523
Total Volume	30	960	7	0	997	23	974	0	0	997	1	0	5	0	6	2	0	20	0	22	2022
% App. Total	3.0	96.3	0.7	0.0	100	2.3	97.7	0.0	0.0	100	16.7	0.0	83.3	0.0	100	9.1	0.0	90.9	0.0	100	
PHF					0.974					0.966					0.750					0.786	0.967
Cars, PU, Vans	29	923	7	0	959	23	934	0	0	957	1	0	5	0	6	2	0	19	0	21	1943
% Cars, PU, Vans	96.7	96.1	100.0	0.0	96.2	100.0	95.9	0.0	0.0	96.0	100.0	0.0	100.0	0.0	100.0	100.0	0.0	95.0	0.0	95.5	96.1
Heavy trucks	1	37	0	0	38	0	40	0	0	40	0	0	0	0	0	0	0	1	0	1	79
%Heavy trucks	3.3	3.9	0.0	0.0	3.8	0.0	4.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	4.5	3.9

File Name: 23-070185-002
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				2nd St Westbound				SR-65 Northbound				2nd St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	499
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1004
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1488
7:00 AM	2	238	0	0	2	2	2	0	7	244	1	0	0	0	1	0	1935
7:15 AM	2	239	0	0	0	0	4	0	14	245	0	0	0	0	1	0	1882
7:30 AM	4	216	0	0	3	1	8	0	16	234	2	0	0	0	0	0	1789
7:45 AM	13	190	0	0	0	0	11	0	16	204	1	0	0	2	10	0	1677
8:00 AM	7	195	0	0	1	0	5	0	12	217	1	0	0	0	8	0	1569
8:15 AM	9	231	0	0	0	0	5	0	3	161	1	0	1	0	1	0	1123
8:30 AM	3	194	0	0	0	0	6	0	4	161	3	0	1	0	0	0	711
8:45 AM	6	164	2	0	1	0	1	0	3	157	2	0	0	0	3	0	339
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	484
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	966
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1471
4:00 PM	6	221	2	0	0	1	6	0	5	238	1	0	0	0	4	0	1965
4:15 PM	8	227	0	0	2	0	4	0	5	232	2	0	0	0	2	0	1981
4:30 PM	3	243	0	0	0	0	2	0	9	244	2	0	0	0	2	0	2022
4:45 PM	7	229	0	0	0	0	6	0	8	240	3	0	0	0	1	0	2007
5:00 PM	3	254	0	0	1	0	6	0	5	230	0	0	0	0	1	0	1984
5:15 PM	10	248	0	0	1	0	6	0	8	246	2	0	1	0	1	0	1484
5:30 PM	4	218	1	0	1	0	3	0	15	245	1	0	0	0	2	0	961
5:45 PM	7	189	2	0	1	1	3	0	10	257	1	0	0	0	0	0	471
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-002
Date : 9/12/2023

All Vehicles & Uturns

	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	2	238	0	0	240	2	2	2	0	6	7	244	1	0	252	0	0	1	0	1	499	0
7:15	2	239	0	0	241	0	0	4	0	4	14	245	0	0	259	0	0	1	0	1	505	0
7:30	4	216	0	0	220	3	1	8	0	12	16	234	2	0	252	0	0	0	0	0	484	0
7:45	13	190	0	0	203	0	0	11	0	11	16	204	1	0	221	0	2	10	0	12	447	0
Total	21	883	0	0	904	5	3	25	0	33	53	927	4	0	984	0	2	12	0	14	1935	0
8:00	7	195	0	0	202	1	0	5	0	6	12	217	1	0	230	0	0	8	0	8	446	0
8:15	9	231	0	0	240	0	0	5	0	5	3	161	1	0	165	1	0	1	0	2	412	0
8:30	3	194	0	0	197	0	0	6	0	6	4	161	3	0	168	1	0	0	0	1	372	0
8:45	6	164	2	0	172	1	0	1	0	2	3	157	2	0	162	0	0	3	0	3	339	0
Total	25	784	2	0	811	2	0	17	0	19	22	696	7	0	725	2	0	12	0	14	1569	0
16:00	6	221	2	0	229	0	1	6	0	7	5	238	1	0	244	0	0	4	0	4	484	0
16:15	8	227	0	0	235	2	0	4	0	6	5	232	2	0	239	0	0	2	0	2	482	0
16:30	3	243	0	0	246	0	0	2	0	2	9	244	2	0	255	0	0	2	0	2	505	0
16:45	7	229	0	0	236	0	0	6	0	6	8	240	3	0	251	0	0	1	0	1	494	0
Total	24	920	2	0	946	2	1	18	0	21	27	954	8	0	989	0	0	9	0	9	1965	0
17:00	3	254	0	0	257	1	0	6	0	7	5	230	0	0	235	0	0	1	0	1	500	0
17:15	10	248	0	0	258	1	0	6	0	7	8	246	2	0	256	1	0	1	0	2	523	0
17:30	4	218	1	0	223	1	0	3	0	4	15	245	1	0	261	0	0	2	0	2	490	0
17:45	7	189	2	0	198	1	1	3	0	5	10	257	1	0	268	0	0	0	0	0	471	0
Total	24	909	3	0	936	4	1	18	0	23	38	978	4	0	1020	1	0	4	0	5	1984	0
Grand Total	94	3496	7	0	3597	13	5	78	0	96	140	3555	23	0	3718	3	2	37	0	42	7453	0
Apprch %	2.6%	97.2%	0.2%	0.0%		13.5%	5.2%	81.3%	0.0%		3.8%	95.6%	0.6%	0.0%		7.1%	4.8%	88.1%	0.0%			
Total %	1.3%	46.9%	0.1%	0.0%	48.3%	0.2%	0.1%	1.0%	0.0%	1.3%	1.9%	47.7%	0.3%	0.0%	49.9%	0.0%	0.0%	0.5%	0.0%	0.6%	100.0%	

AM PEAK HOUR	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	2	238	0	0	240	2	2	2	0	6	7	244	1	0	252	0	0	1	0	1	499
7:15	2	239	0	0	241	0	0	4	0	4	14	245	0	0	259	0	0	1	0	1	505
7:30	4	216	0	0	220	3	1	8	0	12	16	234	2	0	252	0	0	0	0	0	484
7:45	13	190	0	0	203	0	0	11	0	11	16	204	1	0	221	0	2	10	0	12	447
Total Volume	21	883	0	0	904	5	3	25	0	33	53	927	4	0	984	0	2	12	0	14	1935
% App Total	2.3%	97.7%	0.0%	0.0%		15.2%	9.1%	75.8%	0.0%		5.4%	94.2%	0.4%	0.0%		0.0%	14.3%	85.7%	0.0%		
PHF	.404	.924	.000	.000	.938	.417	.375	.568	.000	.688	.828	.946	.500	.000	.950	.000	.250	.300	.000	.292	.958

PM PEAK HOUR	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	3	243	0	0	246	0	0	2	0	2	9	244	2	0	255	0	0	2	0	2	505
16:45	7	229	0	0	236	0	0	6	0	6	8	240	3	0	251	0	0	1	0	1	494
17:00	3	254	0	0	257	1	0	6	0	7	5	230	0	0	235	0	0	1	0	1	500
17:15	10	248	0	0	258	1	0	6	0	7	8	246	2	0	256	1	0	1	0	2	523
Total Volume	23	974	0	0	997	2	0	20	0	22	30	960	7	0	997	1	0	5	0	6	2022
% App Total	2.3%	97.7%	0.0%	0.0%		9.1%	0.0%	90.9%	0.0%		3.0%	96.3%	0.7%	0.0%		16.7%	0.0%	83.3%	0.0%		
PHF	.575	.959	.000	.000	.966	.500	.000	.833	.000	.786	.833	.976	.583	.000	.974	.250	.000	.625	.000	.750	.967

ALL TRAFFIC DATA

City of Wheatland

(916) 771-8700

orders@atdtraffic.com

File Name : 23-070185-002
Date : 9/12/2023

All Bikes and Peds

	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	3
8:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
8:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	4
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
17:45	0	0	0	0	0	0	0	0	5	0	0	0	1	0	1	0	0	0	0	0	1	5
Total	0	0	0	0	0	0	0	0	5	0	0	0	1	0	1	0	0	0	2	0	1	7
Grand Total	0	0	0	1	0	0	0	0	8	0	0	0	1	0	1	0	0	0	6	0	1	15
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	100.0%		100.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

File Name: 23-070185-002
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				2nd St Westbound				SR-65 Northbound				2nd St Eastbound				
Start Time	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
5:45 PM	0	0	0	0	0	0	0	5	0	0	1	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

File Name: 23-070185-002
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				2nd St Westbound				SR-65 Northbound				2nd St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124
7:00 AM	0	33	0	0	0	0	0	0	0	16	0	0	0	0	0	0	156
7:15 AM	0	16	0	0	0	0	0	0	0	12	0	0	0	0	0	0	140
7:30 AM	0	19	0	0	0	0	0	0	0	28	0	0	0	0	0	0	155
7:45 AM	0	17	0	0	0	0	0	0	0	15	0	0	0	0	0	0	144
8:00 AM	0	14	0	0	0	0	0	0	0	19	0	0	0	0	0	0	140
8:15 AM	0	20	0	0	0	0	1	0	1	21	0	0	0	0	0	0	107
8:30 AM	0	14	0	0	0	0	0	0	0	22	0	0	0	0	0	0	64
8:45 AM	0	17	0	0	0	0	0	0	0	11	0	0	0	0	0	0	28
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
4:00 PM	0	4	0	0	0	0	0	0	0	12	0	0	0	0	0	0	90
4:15 PM	0	10	0	0	0	0	0	0	0	15	0	0	0	0	0	0	93
4:30 PM	0	16	0	0	0	0	1	0	0	15	0	0	0	0	0	0	79
4:45 PM	0	7	0	0	0	0	0	0	0	10	0	0	0	0	0	0	60
5:00 PM	0	12	0	0	0	0	0	0	1	6	0	0	0	0	0	0	50
5:15 PM	0	5	0	0	0	0	0	0	0	6	0	0	0	0	0	0	31
5:30 PM	0	9	0	0	0	0	0	0	0	4	0	0	0	0	0	0	20
5:45 PM	0	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	7
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-002
Date : 9/12/2023

All HT & Uturns

	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	33	0	0	33	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	49	0
7:15	0	16	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28	0
7:30	0	19	0	0	19	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	47	0
7:45	0	17	0	0	17	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	32	0
Total	0	85	0	0	85	0	0	0	0	0	0	71	0	0	71	0	0	0	0	0	156	0
8:00	0	14	0	0	14	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	33	0
8:15	0	20	0	0	20	0	0	1	0	1	1	21	0	0	22	0	0	0	0	0	43	0
8:30	0	14	0	0	14	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	36	0
8:45	0	17	0	0	17	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	28	0
Total	0	65	0	0	65	0	0	1	0	1	1	73	0	0	74	0	0	0	0	0	140	0
16:00	0	4	0	0	4	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	16	0
16:15	0	10	0	0	10	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	25	0
16:30	0	16	0	0	16	0	0	1	0	1	0	15	0	0	15	0	0	0	0	0	32	0
16:45	0	7	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17	0
Total	0	37	0	0	37	0	0	1	0	1	0	52	0	0	52	0	0	0	0	0	90	0
17:00	0	12	0	0	12	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	19	0
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	0
17:30	0	9	0	0	9	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	13	0
17:45	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7	0
Total	0	28	0	0	28	0	0	0	0	0	1	21	0	0	22	0	0	0	0	0	50	0
Grand Total	0	215	0	0	215	0	0	2	0	2	2	217	0	0	219	0	0	0	0	0	436	0
Apprch %	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.9%	99.1%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	49.3%	0.0%	0.0%	49.3%	0.0%	0.0%	0.5%	0.0%	0.5%	0.5%	49.8%	0.0%	0.0%	50.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	33	0	0	33	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	49
7:15	0	16	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28
7:30	0	19	0	0	19	0	0	0	0	0	0	28	0	0	28	0	0	0	0	0	47
7:45	0	17	0	0	17	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	32
Total Volume	0	85	0	0	85	0	0	0	0	0	0	71	0	0	71	0	0	0	0	0	156
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.644	.000	.000	.644	.000	.000	.000	.000	.000	.000	.634	.000	.000	.634	.000	.000	.000	.000	.000	.796

PM PEAK HOUR	SR-65 Southbound					2nd St Westbound					SR-65 Northbound					2nd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	16	0	0	16	0	0	1	0	1	0	15	0	0	15	0	0	0	0	0	32
16:45	0	7	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17
17:00	0	12	0	0	12	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	19
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11
Total Volume	0	40	0	0	40	0	0	1	0	1	1	37	0	0	38	0	0	0	0	0	79
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		2.6%	97.4%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.625	.000	.000	.625	.000	.000	.250	.000	.250	.250	.617	.000	.000	.633	.000	.000	.000	.000	.000	.617

National Data & Surveying Services

Intersection Turning Movement Count

Location: #3 - SR-65 & 3rd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-003
Date: 9/12/2023

Data - Total

NS/EW Streets:	SR-65				SR-65				3rd St				3rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	248	2	0	1	231	0	0	0	0	1	0	0	0	1	0	488
7:15 AM	7	260	0	0	5	242	1	0	0	0	1	0	0	0	0	0	516
7:30 AM	16	242	0	0	1	219	0	0	1	0	5	0	0	0	8	0	492
7:45 AM	10	220	2	0	8	189	1	0	0	0	6	0	0	0	5	0	441
8:00 AM	3	225	1	0	8	198	0	0	1	0	5	0	0	0	1	0	442
8:15 AM	5	166	3	0	1	228	1	0	1	0	6	0	0	0	1	0	412
8:30 AM	2	162	0	0	1	194	0	0	0	0	2	0	0	0	2	0	363
8:45 AM	1	162	0	0	3	163	0	0	0	1	1	0	0	0	1	0	332
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	48	1685	8	0	28	1664	3	0	3	1	27	0	0	0	19	0	3486
APPROACH %'s :	2.76%	96.78%	0.46%	0.00%	1.65%	98.17%	0.18%	0.00%	9.68%	3.23%	87.10%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	37	970	4	0	15	881	2	0	1	0	13	0	0	0	14	0	1937
PEAK HR FACTOR :	0.578	0.933	0.500	0.000	0.469	0.910	0.500	0.000	0.250	0.000	0.542	0.000	0.000	0.000	0.438	0.000	0.938
		0.947				0.905				0.583				0.438			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	239	1	0	3	223	0	0	1	0	3	0	0	0	4	0	486
4:15 PM	8	231	0	0	8	221	2	0	3	0	5	0	1	0	6	0	485
4:30 PM	3	248	1	0	8	234	1	0	0	0	2	0	1	0	7	0	505
4:45 PM	3	247	0	0	3	229	0	0	0	0	3	0	0	0	3	0	488
5:00 PM	5	229	0	0	7	243	1	0	0	0	1	0	0	0	6	0	492
5:15 PM	1	251	1	0	3	249	2	0	0	0	2	0	0	0	6	0	515
5:30 PM	7	258	0	0	6	212	2	0	1	0	2	0	0	0	1	0	489
5:45 PM	2	268	4	0	1	190	0	0	0	0	2	0	1	0	0	0	468
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	1971	7	0	39	1801	8	0	5	0	20	0	3	0	33	0	3928
APPROACH %'s :	2.03%	97.62%	0.35%	0.00%	2.11%	97.46%	0.43%	0.00%	20.00%	0.00%	80.00%	0.00%	8.33%	0.00%	91.67%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	12	975	2	0	21	955	4	0	0	0	8	0	1	0	22	0	2000
PEAK HR FACTOR :	0.600	0.971	0.500	0.000	0.656	0.959	0.500	0.000	0.000	0.000	0.667	0.000	0.250	0.000	0.786	0.000	0.971
		0.977				0.965				0.667				0.719			

National Data & Surveying Services

Intersection Turning Movement Count

Location: #3 - SR-65 & 3rd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-003
Date: 9/12/2023

Data - Cars

NS/EW Streets:	SR-65				SR-65				3rd St				3rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	233	1	0	1	199	0	0	0	0	1	0	0	0	1	0	440
7:15 AM	7	248	0	0	5	226	1	0	0	0	1	0	0	0	0	0	488
7:30 AM	16	215	0	0	1	199	0	0	1	0	5	0	0	0	7	0	444
7:45 AM	10	205	2	0	8	172	1	0	0	0	6	0	0	0	5	0	409
8:00 AM	3	205	1	0	8	184	0	0	1	0	5	0	0	0	1	0	408
8:15 AM	5	145	3	0	1	208	1	0	1	0	6	0	0	0	1	0	371
8:30 AM	2	140	0	0	1	181	0	0	0	0	2	0	0	0	2	0	328
8:45 AM	1	150	0	0	3	145	0	0	0	1	1	0	0	0	1	0	302
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	48	1541	7	0	28	1514	3	0	3	1	27	0	0	0	18	0	3190
APPROACH %'s :	3.01%	96.55%	0.44%	0.00%	1.81%	97.99%	0.19%	0.00%	9.68%	3.23%	87.10%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	37	901	3	0	15	796	2	0	1	0	13	0	0	0	13	0	1781
PEAK HR FACTOR :	0.578	0.908	0.375	0.000	0.469	0.881	0.500	0.000	0.250	0.000	0.542	0.000	0.000	0.000	0.464	0.000	0.912
		0.923				0.876				0.583				0.464			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	228	1	0	3	219	0	0	1	0	3	0	0	0	3	0	470
4:15 PM	8	215	0	0	8	211	2	0	3	0	5	0	1	0	6	0	459
4:30 PM	3	235	1	0	8	218	1	0	0	0	2	0	0	0	6	0	474
4:45 PM	3	237	0	0	2	223	0	0	0	0	3	0	0	0	3	0	471
5:00 PM	5	222	0	0	6	232	1	0	0	0	1	0	0	0	6	0	473
5:15 PM	1	245	1	0	3	244	2	0	0	0	2	0	0	0	6	0	504
5:30 PM	7	254	0	0	6	205	2	0	1	0	2	0	0	0	1	0	478
5:45 PM	2	263	4	0	1	187	0	0	0	0	2	0	1	0	0	0	460
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	41	1899	7	0	37	1739	8	0	5	0	20	0	2	0	31	0	3789
APPROACH %'s :	2.11%	97.53%	0.36%	0.00%	2.07%	97.48%	0.45%	0.00%	20.00%	0.00%	80.00%	0.00%	6.06%	0.00%	93.94%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	12	939	2	0	19	917	4	0	0	0	8	0	0	0	21	0	1922
PEAK HR FACTOR :	0.600	0.958	0.500	0.000	0.594	0.940	0.500	0.000	0.000	0.000	0.667	0.000	0.000	0.000	0.875	0.000	0.953
		0.965				0.944				0.667				0.875			

National Data & Surveying Services

Intersection Turning Movement Count

Location: #3 - SR-65 & 3rd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-003
Date: 9/12/2023

Data - HT

NS/EW Streets:	SR-65				SR-65				3rd St				3rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	15	1	0	0	32	0	0	0	0	0	0	0	0	0	0	48
7:15 AM	0	12	0	0	0	16	0	0	0	0	0	0	0	0	0	0	28
7:30 AM	0	27	0	0	0	20	0	0	0	0	0	0	0	0	1	0	48
7:45 AM	0	15	0	0	0	17	0	0	0	0	0	0	0	0	0	0	32
8:00 AM	0	20	0	0	0	14	0	0	0	0	0	0	0	0	0	0	34
8:15 AM	0	21	0	0	0	20	0	0	0	0	0	0	0	0	0	0	41
8:30 AM	0	22	0	0	0	13	0	0	0	0	0	0	0	0	0	0	35
8:45 AM	0	12	0	0	0	18	0	0	0	0	0	0	0	0	0	0	30
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	144	1	0	0	150	0	0	0	0	0	0	0	0	1	0	296
APPROACH %'s :	0.00%	99.31%	0.69%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	69	1	0	0	85	0	0	0	0	0	0	0	0	1	0	156
PEAK HR FACTOR :	0.000	0.639	0.250	0.000	0.000	0.664	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.813
		0.648				0.664								0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	11	0	0	0	4	0	0	0	0	0	0	0	0	1	0	16
4:15 PM	0	16	0	0	0	10	0	0	0	0	0	0	0	0	0	0	26
4:30 PM	0	13	0	0	0	16	0	0	0	0	0	0	1	0	1	0	31
4:45 PM	0	10	0	0	1	6	0	0	0	0	0	0	0	0	0	0	17
5:00 PM	0	7	0	0	1	11	0	0	0	0	0	0	0	0	0	0	19
5:15 PM	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11
5:30 PM	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0	0	11
5:45 PM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	72	0	0	2	62	0	0	0	0	0	0	1	0	2	0	139
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	3.13%	96.88%	0.00%	0.00%					33.33%	0.00%	66.67%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	36	0	0	2	38	0	0	0	0	0	0	1	0	1	0	78
PEAK HR FACTOR :	0.000	0.692	0.000	0.000	0.500	0.594	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.629
		0.692				0.625								0.250			

National Data & Surveying Services
Intersection Turning Movement Count

Location: #3 - SR-65 & 3rd St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-003
Date: 9/12/2023

Data - Bikes

NS/EW Streets:	SR-65				SR-65				3rd St				3rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
APPROACH %'s :													0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: #3 - SR-65 & 3rd St
City: Wheatland
Project ID: 23-070185-003
Date: 9/12/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	SR-65		SR-65		3rd St		3rd St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	2
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	1	0	2
APPROACH %'s :					100.00%	0.00%	100.00%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**								TOTAL
PEAK HR VOL :	0	0	0	0	1	0	1	0	2
PEAK HR FACTOR :					0.250		0.250		0.250
					0.250		0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	4	0	0	4
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	4	1	0	5
APPROACH %'s :					0.00%	100.00%	100.00%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

#3 - SR-65 & 3rd St

Peak Hour Turning Movement Count

ID: 23-070185-003
City: Wheatland

Day: Tuesday
Date: 9/12/2023

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS	
AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

SR-65 SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	2	881	15	0	985
NOON	0	0	0	0	0
PM	4	955	21	0	997
	0	1	1	0	

3rd St EASTBOUND

	AM	NOON	PM	
⇦	39	0	16	
↶	0	0	0	0
↰	1	0	0	0
→	0	0	0	1
↴	13	0	8	0

3rd St WESTBOUND

		PM	NOON	AM
0	↰	22	0	14
1	←	0	0	0
0	↙	1	0	0
0	↶	0	0	0
	⇨	23	0	19

CONTROL

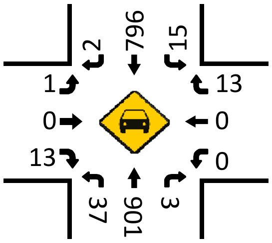
2-Way Stop(EB/WB)

	AM	NOON	PM
TEV	1937	0	2000
PHF	0.94		0.97

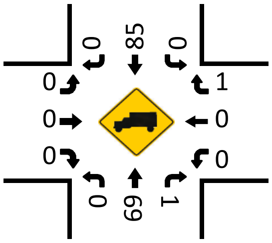
SR-65 NORTHBOUND

	⇩	↶	↰	↑	↱
		0	1	1	0
PM	964	0	12	975	2
NOON	0	0	0	0	0
AM	894	0	37	970	4

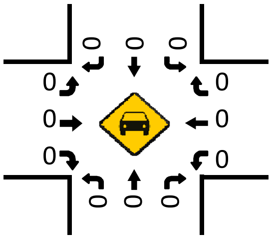
Cars (AM)



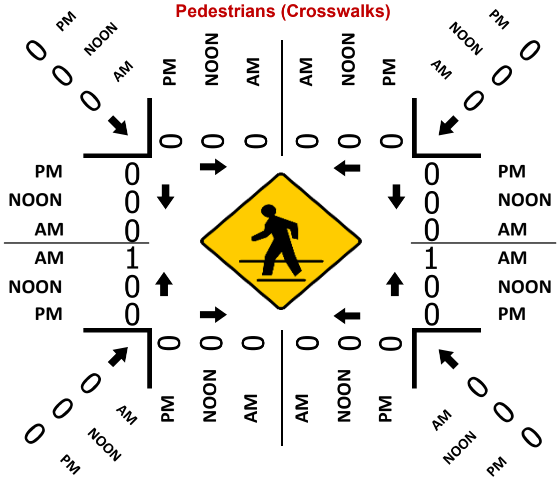
HT (AM)



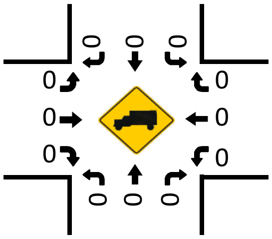
Cars (NOON)



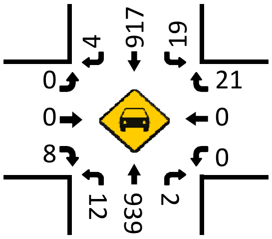
Pedestrians (Crosswalks)



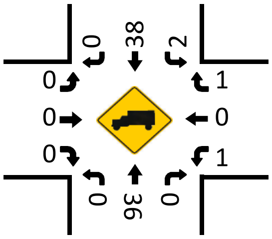
HT (NOON)



Cars (PM)



HT (PM)



Project ID: 23-070185-003
Location: #3 - SR-65 & 3rd St
City: Wheatland

Day: Tuesday
Date: 9/12/2023

Groups Printed - Cars, PU, Vans - Heavy Trucks

	SR-65 Northbound						**SR-65 Southbound**						**3rd St Eastbound**						**3rd St Westbound**						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	4	248	2	0	0	254	1	231	0	0	0	232	0	0	1	0	1	1	0	0	1	0	1	1	488
7:15 AM	7	260	0	0	0	267	5	242	1	0	0	248	0	0	1	0	0	1	0	0	0	0	0	0	516
7:30 AM	16	242	0	0	0	258	1	219	0	0	0	220	1	0	5	0	0	6	0	0	8	0	0	8	492
7:45 AM	10	220	2	0	0	232	8	189	1	0	0	198	0	0	6	0	0	6	0	0	5	0	0	5	441
Total	37	970	4	0	0	1011	15	881	2	0	0	898	1	0	13	0	1	14	0	0	14	0	1	14	1937
8:00 AM	3	225	1	0	0	229	8	198	0	0	0	206	1	0	5	0	0	6	0	0	1	0	0	1	442
8:15 AM	5	166	3	0	0	174	1	228	1	0	0	230	1	0	6	0	0	7	0	0	1	0	0	1	412
8:30 AM	2	162	0	0	0	164	1	194	0	0	0	195	0	0	2	0	0	2	0	0	2	0	0	2	363
8:45 AM	1	162	0	0	0	163	3	163	0	0	0	166	0	1	1	0	0	2	0	0	1	0	0	1	332
Total	11	715	4	0	0	730	13	783	1	0	0	797	2	1	14	0	0	17	0	0	5	0	0	5	1549
BREAK																									
4:00 PM	12	239	1	0	0	252	3	223	0	0	0	226	1	0	3	0	1	4	0	0	4	0	0	4	486
4:15 PM	8	231	0	0	0	239	8	221	2	0	0	231	3	0	5	0	0	8	1	0	6	0	0	7	485
4:30 PM	3	248	1	0	0	252	8	234	1	0	0	243	0	0	2	0	0	2	1	0	7	0	0	8	505
4:45 PM	3	247	0	0	0	250	3	229	0	0	0	232	0	0	3	0	0	3	0	0	3	0	0	3	488
Total	26	965	2	0	0	993	22	907	3	0	0	932	4	0	13	0	1	17	2	0	20	0	0	22	1964
5:00 PM	5	229	0	0	0	234	7	243	1	0	0	251	0	0	1	0	0	1	0	0	6	0	0	6	492
5:15 PM	1	251	1	0	0	253	3	249	2	0	0	254	0	0	2	0	0	2	0	0	6	0	0	6	515
5:30 PM	7	258	0	0	0	265	6	212	2	0	0	220	1	0	2	0	0	3	0	0	1	0	0	1	489
5:45 PM	2	268	4	0	0	274	1	190	0	0	0	191	0	0	2	0	0	2	1	0	0	0	4	1	468
Total	15	1006	5	0	0	1026	17	894	5	0	0	916	1	0	7	0	0	8	1	0	13	0	4	14	1964
Grand Total	89	3656	15	0	0	3760	67	3465	11	0	0	3543	8	1	47	0	2	56	3	0	52	0	5	55	7414
Apprch %	2.4	97.2	0.4	0.0	0.0		1.9	97.8	0.3	0.0	0.0		14.3	1.8	83.9	0.0	3.6		5.5	0.0	94.5	0.0	9.1		
Total %	1.2	49.3	0.2	0.0	0.0	50.7	0.9	46.7	0.1	0.0	0.0	47.8	0.1	0.0	0.6	0.0	0.0	0.8	0.0	0.0	0.7	0.0	0.1	0.7	
Cars, PU, Vans	89	3440	14	0		3543	65	3253	11	0		3329	8	1	47	0		56	2	0	49	0		51	6979
% Cars, PU, Vans	100.0	94.1	93.3	0.0		94.2	97.0	93.9	100.0	0.0		94.0	100.0	100.0	100.0	0.0		100.0	66.7	0.0	94.2	0.0		92.7	94.1
Heavy trucks	0	216	1	0		217	2	212	0	0		214	0	0	0	0		0	1	0	3	0		4	435
%Heavy trucks	0.0	5.9	6.7	0.0		5.8	3.0	6.1	0.0	0.0		6.0	0.0	0.0	0.0	0.0		0.0	33.3	0.0	5.8	0.0		7.3	5.9

Project ID: 23-070185-003
Location: #3 - SR-65 & 3rd St
City: Wheatland

PEAK HOURS

Day: Tuesday
Date: 9/12/2023

AM

	SR-65 Northbound					SR-65 Southbound					3rd St Eastbound					3rd St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
7:00 AM	4	248	2	0	254	1	231	0	0	232	0	0	1	0	1	0	0	1	0	1	488
7:15 AM	7	260	0	0	267	5	242	1	0	248	0	0	1	0	1	0	0	0	0	0	516
7:30 AM	16	242	0	0	258	1	219	0	0	220	1	0	5	0	6	0	0	8	0	8	492
7:45 AM	10	220	2	0	232	8	189	1	0	198	0	0	6	0	6	0	0	5	0	5	441
Total Volume	37	970	4	0	1011	15	881	2	0	898	1	0	13	0	14	0	0	14	0	14	1937
% App. Total	3.7	95.9	0.4	0.0	100	1.7	98.1	0.2	0.0	100	7.1	0.0	92.9	0.0	100	0.0	0.0	100.0	0.0	100	
PHF					0.947					0.905					0.583					0.438	0.938
Cars, PU, Vans	37	901	3	0	941	15	796	2	0	813	1	0	13	0	14	0	0	13	0	13	1781
% Cars, PU, Vans	100.0	92.9	75.0	0.0	93.1	100.0	90.4	100.0	0.0	90.5	100.0	0.0	100.0	0.0	100.0	0.0	0.0	92.9	0.0	92.9	91.9
Heavy trucks	0	69	1	0	70	0	85	0	0	85	0	0	0	0	0	0	0	1	0	1	156
%Heavy trucks	0.0	7.1	25.0	0.0	6.9	0.0	9.6	0.0	0.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	7.1	8.1

PM

	SR-65 Northbound					SR-65 Southbound					3rd St Eastbound					3rd St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	3	248	1	0	252	8	234	1	0	243	0	0	2	0	2	1	0	7	0	8	505
4:45 PM	3	247	0	0	250	3	229	0	0	232	0	0	3	0	3	0	0	3	0	3	488
5:00 PM	5	229	0	0	234	7	243	1	0	251	0	0	1	0	1	0	0	6	0	6	492
5:15 PM	1	251	1	0	253	3	249	2	0	254	0	0	2	0	2	0	0	6	0	6	515
Total Volume	12	975	2	0	989	21	955	4	0	980	0	0	8	0	8	1	0	22	0	23	2000
% App. Total	1.2	98.6	0.2	0.0	100	2.1	97.4	0.4	0.0	100	0.0	0.0	100.0	0.0	100	4.3	0.0	95.7	0.0	100	
PHF					0.977					0.965					0.667					0.719	0.971
Cars, PU, Vans	12	939	2	0	953	19	917	4	0	940	0	0	8	0	8	0	0	21	0	21	1922
% Cars, PU, Vans	100.0	96.3	100.0	0.0	96.4	90.5	96.0	100.0	0.0	95.9	0.0	0.0	100.0	0.0	100.0	0.0	0.0	95.5	0.0	91.3	96.1
Heavy trucks	0	36	0	0	36	2	38	0	0	40	0	0	0	0	0	1	0	1	0	2	78
%Heavy trucks	0.0	3.7	0.0	0.0	3.6	9.5	4.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	100.0	0.0	4.5	0.0	8.7	3.9

File Name: 23-070185-003
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				3rd St Westbound				SR-65 Northbound				3rd St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	488
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1004
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1496
7:00 AM	1	231	0	0	0	0	1	0	4	248	2	0	0	0	1	0	1937
7:15 AM	5	242	1	0	0	0	0	0	7	260	0	0	0	0	1	0	1891
7:30 AM	1	219	0	0	0	0	8	0	16	242	0	0	1	0	5	0	1787
7:45 AM	8	189	1	0	0	0	5	0	10	220	2	0	0	0	6	0	1658
8:00 AM	8	198	0	0	0	0	1	0	3	225	1	0	1	0	5	0	1549
8:15 AM	1	228	1	0	0	0	1	0	5	166	3	0	1	0	6	0	1107
8:30 AM	1	194	0	0	0	0	2	0	2	162	0	0	0	0	2	0	695
8:45 AM	3	163	0	0	0	0	1	0	1	162	0	0	0	1	1	0	332
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	486
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	971
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1476
4:00 PM	3	223	0	0	0	0	4	0	12	239	1	0	1	0	3	0	1964
4:15 PM	8	221	2	0	1	0	6	0	8	231	0	0	3	0	5	0	1970
4:30 PM	8	234	1	0	1	0	7	0	3	248	1	0	0	0	2	0	2000
4:45 PM	3	229	0	0	0	0	3	0	3	247	0	0	0	0	3	0	1984
5:00 PM	7	243	1	0	0	0	6	0	5	229	0	0	0	0	1	0	1964
5:15 PM	3	249	2	0	0	0	6	0	1	251	1	0	0	0	2	0	1472
5:30 PM	6	212	2	0	0	0	1	0	7	258	0	0	1	0	2	0	957
5:45 PM	1	190	0	0	1	0	0	0	2	268	4	0	0	0	2	0	468
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-003
Date : 9/12/2023

All Vehicles & Uturns

	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	1	231	0	0	232	0	0	1	0	1	4	248	2	0	254	0	0	1	0	1	488	0
7:15	5	242	1	0	248	0	0	0	0	0	7	260	0	0	267	0	0	1	0	1	516	0
7:30	1	219	0	0	220	0	0	8	0	8	16	242	0	0	258	1	0	5	0	6	492	0
7:45	8	189	1	0	198	0	0	5	0	5	10	220	2	0	232	0	0	6	0	6	441	0
Total	15	881	2	0	898	0	0	14	0	14	37	970	4	0	1011	1	0	13	0	14	1937	0
8:00	8	198	0	0	206	0	0	1	0	1	3	225	1	0	229	1	0	5	0	6	442	0
8:15	1	228	1	0	230	0	0	1	0	1	5	166	3	0	174	1	0	6	0	7	412	0
8:30	1	194	0	0	195	0	0	2	0	2	2	162	0	0	164	0	0	2	0	2	363	0
8:45	3	163	0	0	166	0	0	1	0	1	1	162	0	0	163	0	1	1	0	2	332	0
Total	13	783	1	0	797	0	0	5	0	5	11	715	4	0	730	2	1	14	0	17	1549	0
16:00	3	223	0	0	226	0	0	4	0	4	12	239	1	0	252	1	0	3	0	4	486	0
16:15	8	221	2	0	231	1	0	6	0	7	8	231	0	0	239	3	0	5	0	8	485	0
16:30	8	234	1	0	243	1	0	7	0	8	3	248	1	0	252	0	0	2	0	2	505	0
16:45	3	229	0	0	232	0	0	3	0	3	3	247	0	0	250	0	0	3	0	3	488	0
Total	22	907	3	0	932	2	0	20	0	22	26	965	2	0	993	4	0	13	0	17	1964	0
17:00	7	243	1	0	251	0	0	6	0	6	5	229	0	0	234	0	0	1	0	1	492	0
17:15	3	249	2	0	254	0	0	6	0	6	1	251	1	0	253	0	0	2	0	2	515	0
17:30	6	212	2	0	220	0	0	1	0	1	7	258	0	0	265	1	0	2	0	3	489	0
17:45	1	190	0	0	191	1	0	0	0	1	2	268	4	0	274	0	0	2	0	2	468	0
Total	17	894	5	0	916	1	0	13	0	14	15	1006	5	0	1026	1	0	7	0	8	1964	0
Grand Total	67	3465	11	0	3543	3	0	52	0	55	89	3656	15	0	3760	8	1	47	0	56	7414	0
Apprch %	1.9%	97.8%	0.3%	0.0%		5.5%	0.0%	94.5%	0.0%		2.4%	97.2%	0.4%	0.0%		14.3%	1.8%	83.9%	0.0%			
Total %	0.9%	46.7%	0.1%	0.0%	47.8%	0.0%	0.0%	0.7%	0.0%	0.7%	1.2%	49.3%	0.2%	0.0%	50.7%	0.1%	0.0%	0.6%	0.0%	0.8%	100.0%	

AM PEAK HOUR	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	1	231	0	0	232	0	0	1	0	1	4	248	2	0	254	0	0	1	0	1	488
7:15	5	242	1	0	248	0	0	0	0	0	7	260	0	0	267	0	0	1	0	1	516
7:30	1	219	0	0	220	0	0	8	0	8	16	242	0	0	258	1	0	5	0	6	492
7:45	8	189	1	0	198	0	0	5	0	5	10	220	2	0	232	0	0	6	0	6	441
Total Volume	15	881	2	0	898	0	0	14	0	14	37	970	4	0	1011	1	0	13	0	14	1937
% App Total	1.7%	98.1%	0.2%	0.0%		0.0%	0.0%	100.0%	0.0%		3.7%	95.9%	0.4%	0.0%		7.1%	0.0%	92.9%	0.0%		
PHF	.469	.910	.500	.000	.905	.000	.000	.438	.000	.438	.578	.933	.500	.000	.947	.250	.000	.542	.000	.583	.938

PM PEAK HOUR	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	8	234	1	0	243	1	0	7	0	8	3	248	1	0	252	0	0	2	0	2	505
16:45	3	229	0	0	232	0	0	3	0	3	3	247	0	0	250	0	0	3	0	3	488
17:00	7	243	1	0	251	0	0	6	0	6	5	229	0	0	234	0	0	1	0	1	492
17:15	3	249	2	0	254	0	0	6	0	6	1	251	1	0	253	0	0	2	0	2	515
Total Volume	21	955	4	0	980	1	0	22	0	23	12	975	2	0	989	0	0	8	0	8	2000
% App Total	2.1%	97.4%	0.4%	0.0%		4.3%	0.0%	95.7%	0.0%		1.2%	98.6%	0.2%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.656	.959	.500	.000	.965	.250	.000	.786	.000	.719	.600	.971	.500	.000	.977	.000	.000	.667	.000	.667	.971

File Name: 23-070185-003
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				3rd St Westbound				SR-65 Northbound				3rd St Eastbound				
Start Time	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-003
Date : 9/12/2023

All Bikes and Peds

	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1	2
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	1	4
Total	0	0	0	0	0	0	0	1	4	1	0	0	0	0	0	0	0	0	0	0	1	4
Grand Total	0	0	0	0	0	0	0	1	5	1	0	1	0	0	1	0	0	0	2	0	2	7
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	100.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	50.0%		50.0%	0.0%	50.0%	0.0%		50.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.250

PM PEAK HOUR	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

File Name: 23-070185-003
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				3rd St Westbound				SR-65 Northbound				3rd St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124
7:00 AM	0	32	0	0	0	0	0	0	0	15	1	0	0	0	0	0	156
7:15 AM	0	16	0	0	0	0	0	0	0	12	0	0	0	0	0	0	142
7:30 AM	0	20	0	0	0	0	1	0	0	27	0	0	0	0	0	0	155
7:45 AM	0	17	0	0	0	0	0	0	0	15	0	0	0	0	0	0	142
8:00 AM	0	14	0	0	0	0	0	0	0	20	0	0	0	0	0	0	140
8:15 AM	0	20	0	0	0	0	0	0	0	21	0	0	0	0	0	0	106
8:30 AM	0	13	0	0	0	0	0	0	0	22	0	0	0	0	0	0	65
8:45 AM	0	18	0	0	0	0	0	0	0	12	0	0	0	0	0	0	30
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
4:00 PM	0	4	0	0	0	0	1	0	0	11	0	0	0	0	0	0	90
4:15 PM	0	10	0	0	0	0	0	0	0	16	0	0	0	0	0	0	93
4:30 PM	0	16	0	0	1	0	1	0	0	13	0	0	0	0	0	0	78
4:45 PM	1	6	0	0	0	0	0	0	0	10	0	0	0	0	0	0	58
5:00 PM	1	11	0	0	0	0	0	0	0	7	0	0	0	0	0	0	49
5:15 PM	0	5	0	0	0	0	0	0	0	6	0	0	0	0	0	0	30
5:30 PM	0	7	0	0	0	0	0	0	0	4	0	0	0	0	0	0	19
5:45 PM	0	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	8
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-003
Date : 9/12/2023

All HT & Uturns

	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	32	0	0	32	0	0	0	0	0	0	15	1	0	16	0	0	0	0	0	48	0
7:15	0	16	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28	0
7:30	0	20	0	0	20	0	0	1	0	1	0	27	0	0	27	0	0	0	0	0	48	0
7:45	0	17	0	0	17	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	32	0
Total	0	85	0	0	85	0	0	1	0	1	0	69	1	0	70	0	0	0	0	0	156	0
8:00	0	14	0	0	14	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	34	0
8:15	0	20	0	0	20	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	41	0
8:30	0	13	0	0	13	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	35	0
8:45	0	18	0	0	18	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	30	0
Total	0	65	0	0	65	0	0	0	0	0	0	75	0	0	75	0	0	0	0	0	140	0
16:00	0	4	0	0	4	0	0	1	0	1	0	11	0	0	11	0	0	0	0	0	16	0
16:15	0	10	0	0	10	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	26	0
16:30	0	16	0	0	16	1	0	1	0	2	0	13	0	0	13	0	0	0	0	0	31	0
16:45	1	6	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17	0
Total	1	36	0	0	37	1	0	2	0	3	0	50	0	0	50	0	0	0	0	0	90	0
17:00	1	11	0	0	12	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	19	0
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	0
17:30	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	11	0
17:45	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	8	0
Total	1	26	0	0	27	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	49	0
Grand Total	2	212	0	0	214	1	0	3	0	4	0	216	1	0	217	0	0	0	0	0	435	0
Apprch %	0.9%	99.1%	0.0%	0.0%		25.0%	0.0%	75.0%	0.0%		0.0%	99.5%	0.5%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.5%	48.7%	0.0%	0.0%	49.2%	0.2%	0.0%	0.7%	0.0%	0.9%	0.0%	49.7%	0.2%	0.0%	49.9%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	32	0	0	32	0	0	0	0	0	0	15	1	0	16	0	0	0	0	0	48
7:15	0	16	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28
7:30	0	20	0	0	20	0	0	1	0	1	0	27	0	0	27	0	0	0	0	0	48
7:45	0	17	0	0	17	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	32
Total Volume	0	85	0	0	85	0	0	1	0	1	0	69	1	0	70	0	0	0	0	0	156
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	98.6%	1.4%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.664	.000	.000	.664	.000	.000	.250	.000	.250	.000	.639	.250	.000	.648	.000	.000	.000	.000	.000	.813

PM PEAK HOUR	SR-65 Southbound					3rd St Westbound					SR-65 Northbound					3rd St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	16	0	0	16	1	0	1	0	2	0	13	0	0	13	0	0	0	0	0	31
16:45	1	6	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17
17:00	1	11	0	0	12	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	19
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11
Total Volume	2	38	0	0	40	1	0	1	0	2	0	36	0	0	36	0	0	0	0	0	78
% App Total	5.0%	95.0%	0.0%	0.0%		50.0%	0.0%	50.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.500	.594	.000	.000	.625	.250	.000	.250	.000	.250	.000	.692	.000	.000	.692	.000	.000	.000	.000	.000	.629

National Data & Surveying Services

Intersection Turning Movement Count

Location: #4 - SR-65 & 4th St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-004
Date: 9/12/2023

Data - Total

NS/EW Streets:	SR-65				SR-65				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	241	0	0	14	223	0	0	0	0	0	0	1	0	16	0	496
7:15 AM	4	244	1	0	6	235	0	0	0	0	0	0	0	0	25	0	515
7:30 AM	2	204	2	0	15	211	0	0	0	0	0	0	0	0	48	0	482
7:45 AM	3	200	0	0	22	171	1	0	0	0	1	0	1	0	32	0	431
8:00 AM	5	203	0	0	18	185	1	0	0	0	0	0	1	0	28	0	441
8:15 AM	3	159	1	0	17	213	2	0	0	0	0	0	1	0	15	0	411
8:30 AM	0	149	0	0	8	189	1	0	0	0	1	0	0	0	15	0	363
8:45 AM	1	151	0	0	15	147	1	0	0	0	0	0	1	0	12	0	328
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	1551	4	0	115	1574	6	0	0	0	2	0	5	0	191	0	3467
APPROACH %'s :	1.21%	98.54%	0.25%	0.00%	6.78%	92.86%	0.35%	0.00%	0.00%	0.00%	100.00%	0.00%	2.55%	0.00%	97.45%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	10	889	3	0	57	840	1	0	0	0	1	0	2	0	121	0	1924
PEAK HR FACTOR :	0.625	0.911	0.375	0.000	0.648	0.894	0.250	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.630	0.000	0.934
	0.906				0.932				0.250				0.641				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	228	1	0	21	202	0	0	0	0	0	0	0	0	24	0	479
4:15 PM	0	218	0	0	14	216	0	0	0	0	0	0	0	0	22	0	470
4:30 PM	0	227	1	0	17	216	1	0	0	0	0	0	3	0	26	0	491
4:45 PM	1	220	0	0	14	221	0	0	0	0	0	0	0	0	28	0	484
5:00 PM	5	220	0	0	13	228	3	0	0	0	0	0	1	0	14	0	484
5:15 PM	2	233	0	0	20	229	2	0	1	0	0	0	0	0	19	0	506
5:30 PM	1	241	0	0	18	191	2	0	0	0	0	0	0	1	26	0	480
5:45 PM	3	258	1	0	13	178	3	0	1	1	0	0	0	0	13	0	471
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	15	1845	3	0	130	1681	11	0	2	1	0	0	4	1	172	0	3865
APPROACH %'s :	0.81%	99.03%	0.16%	0.00%	7.14%	92.26%	0.60%	0.00%	66.67%	33.33%	0.00%	0.00%	2.26%	0.56%	97.18%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	8	900	1	0	64	894	6	0	1	0	0	0	4	0	87	0	1965
PEAK HR FACTOR :	0.400	0.966	0.250	0.000	0.800	0.976	0.500	0.000	0.250	0.000	0.000	0.000	0.333	0.000	0.777	0.000	0.971
	0.967				0.960				0.250				0.784				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #4 - SR-65 & 4th St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-004
Date: 9/12/2023

Data - Cars

NS/EW Streets:	SR-65				SR-65				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	227	0	0	12	190	0	0	0	0	0	0	1	0	15	0	446
7:15 AM	4	232	1	0	6	220	0	0	0	0	0	0	0	0	25	0	488
7:30 AM	2	177	2	0	14	191	0	0	0	0	0	0	0	0	48	0	434
7:45 AM	3	185	0	0	22	155	1	0	0	0	1	0	1	0	32	0	400
8:00 AM	5	182	0	0	18	170	1	0	0	0	0	0	1	0	28	0	405
8:15 AM	3	139	1	0	16	194	2	0	0	0	0	0	1	0	13	0	369
8:30 AM	0	127	0	0	8	176	1	0	0	0	1	0	0	0	15	0	328
8:45 AM	1	139	0	0	15	130	1	0	0	0	0	0	1	0	12	0	299
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	19	1408	4	0	111	1426	6	0	0	0	2	0	5	0	188	0	3169
APPROACH %'s :	1.33%	98.39%	0.28%	0.00%	7.19%	92.42%	0.39%	0.00%	0.00%	0.00%	100.00%	0.00%	2.59%	0.00%	97.41%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	10	821	3	0	54	756	1	0	0	0	1	0	2	0	120	0	1768
PEAK HR FACTOR :	0.625	0.885	0.375	0.000	0.614	0.859	0.250	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.625	0.000	0.906
	0.880				0.897				0.250				0.635				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	217	1	0	21	198	0	0	0	0	0	0	0	0	23	0	463
4:15 PM	0	201	0	0	14	206	0	0	0	0	0	0	0	0	22	0	443
4:30 PM	0	215	1	0	16	201	1	0	0	0	0	0	3	0	26	0	463
4:45 PM	1	210	0	0	14	214	0	0	0	0	0	0	0	0	28	0	467
5:00 PM	5	213	0	0	13	217	3	0	0	0	0	0	1	0	14	0	466
5:15 PM	2	227	0	0	20	224	2	0	1	0	0	0	0	0	19	0	495
5:30 PM	1	237	0	0	18	184	2	0	0	0	0	0	0	1	26	0	469
5:45 PM	3	253	1	0	13	176	3	0	1	1	0	0	0	0	13	0	464
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	15	1773	3	0	129	1620	11	0	2	1	0	0	4	1	171	0	3730
APPROACH %'s :	0.84%	98.99%	0.17%	0.00%	7.33%	92.05%	0.63%	0.00%	66.67%	33.33%	0.00%	0.00%	2.27%	0.57%	97.16%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	8	865	1	0	63	856	6	0	1	0	0	0	4	0	87	0	1891
PEAK HR FACTOR :	0.400	0.953	0.250	0.000	0.788	0.955	0.500	0.000	0.250	0.000	0.000	0.000	0.333	0.000	0.777	0.000	0.955
	0.954				0.940				0.250				0.784				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #4 - SR-65 & 4th St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-004
Date: 9/12/2023

Data - HT

NS/EW Streets:	SR-65				SR-65				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	14	0	0	2	33	0	0	0	0	0	0	0	0	1	0	50
7:15 AM	0	12	0	0	0	15	0	0	0	0	0	0	0	0	0	0	27
7:30 AM	0	27	0	0	1	20	0	0	0	0	0	0	0	0	0	0	48
7:45 AM	0	15	0	0	0	16	0	0	0	0	0	0	0	0	0	0	31
8:00 AM	0	21	0	0	0	15	0	0	0	0	0	0	0	0	0	0	36
8:15 AM	0	20	0	0	1	19	0	0	0	0	0	0	0	0	2	0	42
8:30 AM	0	22	0	0	0	13	0	0	0	0	0	0	0	0	0	0	35
8:45 AM	0	12	0	0	0	17	0	0	0	0	0	0	0	0	0	0	29
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	143	0	0	4	148	0	0	0	0	0	0	0	0	3	0	298
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	2.63%	97.37%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	68	0	0	3	84	0	0	0	0	0	0	0	0	1	0	156
PEAK HR FACTOR :	0.000	0.630	0.000	0.000	0.375	0.636	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.780
	0.630				0.621								0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	11	0	0	0	4	0	0	0	0	0	0	0	0	1	0	16
4:15 PM	0	17	0	0	0	10	0	0	0	0	0	0	0	0	0	0	27
4:30 PM	0	12	0	0	1	15	0	0	0	0	0	0	0	0	0	0	28
4:45 PM	0	10	0	0	0	7	0	0	0	0	0	0	0	0	0	0	17
5:00 PM	0	7	0	0	0	11	0	0	0	0	0	0	0	0	0	0	18
5:15 PM	0	6	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11
5:30 PM	0	4	0	0	0	7	0	0	0	0	0	0	0	0	0	0	11
5:45 PM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	72	0	0	1	61	0	0	0	0	0	0	0	0	1	0	135
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	1.61%	98.39%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	35	0	0	1	38	0	0	0	0	0	0	0	0	0	0	74
PEAK HR FACTOR :	0.000	0.729	0.000	0.000	0.250	0.633	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.661
	0.729				0.609												

National Data & Surveying Services

Intersection Turning Movement Count

Location: #4 - SR-65 & 4th St
City: Wheatland
Control: 2-Way Stop(EB/WB)

Project ID: 23-070185-004
Date: 9/12/2023

Data - Bikes

NS/EW Streets:	SR-65				SR-65				4th St				4th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%													
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: #4 - SR-65 & 4th St
City: Wheatland

Project ID: 23-070185-004
Date: 9/12/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	SR-65		SR-65		4th St		4th St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	2
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	1	0	2
APPROACH %'s :					100.00%	0.00%	100.00%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**								TOTAL
PEAK HR VOL :	0	0	0	0	1	0	1	0	2
PEAK HR FACTOR :					0.250		0.250		0.250
					0.250		0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	4	0	0	4
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	4	1	0	5
APPROACH %'s :					0.00%	100.00%	100.00%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

#4 - SR-65 & 4th St

Peak Hour Turning Movement Count

ID: 23-070185-004
City: Wheatland

Day: Tuesday
Date: 9/12/2023

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

SR-65

SOUTHBOUND

	↲	↓	↳	U	⇧
AM	1	840	57	0	1010
NOON	0	0	0	0	0
PM	6	894	64	0	988
Lanes	0	1	1	0	

4th St

EASTBOUND

	AM	NOON	PM	Lanes
⇦	11	0	14	
U	0	0	0	0
↱	0	0	1	0
→	0	0	0	1
↴	1	0	0	0

CONTROL

2-Way Stop(EB/WB)

	AM	NOON	PM
TEV	1924	0	1965
PHF	0.93		0.97

WESTBOUND

4th St

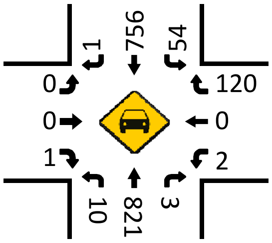
Lanes		PM	NOON	AM
0	↰	87	0	121
1	←	0	0	0
0	↙	4	0	2
0	U	0	0	0
	⇨	65	0	60

NORTHBOUND

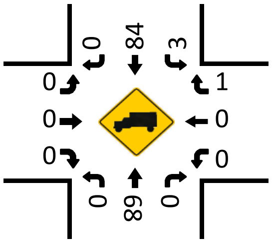
SR-65

	⇩	U	↰	↑	↱
Lanes		0	1	1	0
PM	898	0	8	900	1
NOON	0	0	0	0	0
AM	843	0	10	889	3

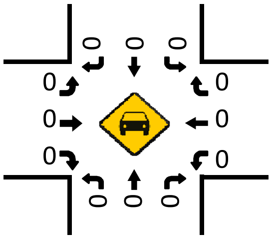
Cars (AM)



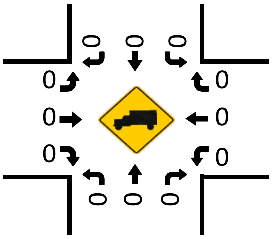
HT (AM)



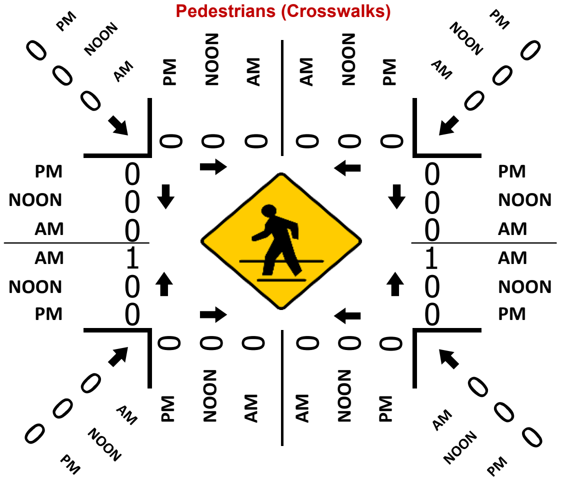
Cars (NOON)



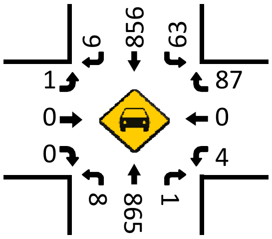
HT (NOON)



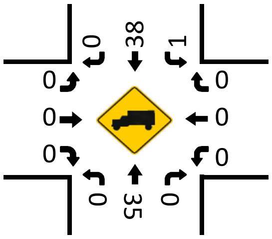
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Project ID: 23-070185-004
Location: #4 - SR-65 & 4th St
City: Wheatland

Day: Tuesday
Date: 9/12/2023

Groups Printed - Cars, PU, Vans - Heavy Trucks

	SR-65 Northbound						SR-65 Southbound						4th St Eastbound						4th St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	1	241	0	0	0	242	14	223	0	0	0	237	0	0	0	0	1	0	1	0	16	0	1	17	496
7:15 AM	4	244	1	0	0	249	6	235	0	0	0	241	0	0	0	0	0	0	0	0	25	0	0	25	515
7:30 AM	2	204	2	0	0	208	15	211	0	0	0	226	0	0	0	0	0	0	0	0	48	0	0	48	482
7:45 AM	3	200	0	0	0	203	22	171	1	0	0	194	0	0	1	0	0	1	1	0	32	0	0	33	431
Total	10	889	3	0	0	902	57	840	1	0	0	898	0	0	1	0	1	1	2	0	121	0	1	123	1924
8:00 AM	5	203	0	0	0	208	18	185	1	0	0	204	0	0	0	0	0	0	1	0	28	0	0	29	441
8:15 AM	3	159	1	0	0	163	17	213	2	0	0	232	0	0	0	0	0	0	1	0	15	0	0	16	411
8:30 AM	0	149	0	0	0	149	8	189	1	0	0	198	0	0	1	0	0	1	0	0	15	0	0	15	363
8:45 AM	1	151	0	0	0	152	15	147	1	0	0	163	0	0	0	0	0	0	1	0	12	0	0	13	328
Total	9	662	1	0	0	672	58	734	5	0	0	797	0	0	1	0	0	1	3	0	70	0	0	73	1543
BREAK																									
4:00 PM	3	228	1	0	0	232	21	202	0	0	0	223	0	0	0	0	1	0	0	0	24	0	0	24	479
4:15 PM	0	218	0	0	0	218	14	216	0	0	0	230	0	0	0	0	0	0	0	0	22	0	0	22	470
4:30 PM	0	227	1	0	0	228	17	216	1	0	0	234	0	0	0	0	0	0	3	0	26	0	0	29	491
4:45 PM	1	220	0	0	0	221	14	221	0	0	0	235	0	0	0	0	0	0	0	0	28	0	0	28	484
Total	4	893	2	0	0	899	66	855	1	0	0	922	0	0	0	0	1	0	3	0	100	0	0	103	1924
5:00 PM	5	220	0	0	0	225	13	228	3	0	0	244	0	0	0	0	0	0	1	0	14	0	0	15	484
5:15 PM	2	233	0	0	0	235	20	229	2	0	0	251	1	0	0	0	0	1	0	0	19	0	0	19	506
5:30 PM	1	241	0	0	0	242	18	191	2	0	0	211	0	0	0	0	0	0	0	1	26	0	0	27	480
5:45 PM	3	258	1	0	0	262	13	178	3	0	0	194	1	1	0	0	0	2	0	0	13	0	4	13	471
Total	11	952	1	0	0	964	64	826	10	0	0	900	2	1	0	0	0	3	1	1	72	0	4	74	1941
Grand Total	34	3396	7	0	0	3437	245	3255	17	0	0	3517	2	1	2	0	2	5	9	1	363	0	5	373	7332
Apprch %	1.0	98.8	0.2	0.0	0.0		7.0	92.6	0.5	0.0	0.0		40.0	20.0	40.0	0.0	40.0		2.4	0.3	97.3	0.0	1.3		
Total %	0.5	46.3	0.1	0.0	0.0	46.9	3.3	44.4	0.2	0.0	0.0	48.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	5.0	0.0	0.1	5.1	
Cars, PU, Vans	34	3181	7	0		3222	240	3046	17	0		3303	2	1	2	0		5	9	1	359	0		369	6899
% Cars, PU, Vans	100.0	93.7	100.0	0.0		93.7	98.0	93.6	100.0	0.0		93.9	100.0	100.0	100.0	0.0		100.0	100.0	100.0	98.9	0.0		98.9	94.1
Heavy trucks	0	215	0	0		215	5	209	0	0		214	0	0	0	0		0	0	0	4	0		4	433
%Heavy trucks	0.0	6.3	0.0	0.0		6.3	2.0	6.4	0.0	0.0		6.1	0.0	0.0	0.0	0.0		0.0	0.0	0.0	1.1	0.0		1.1	5.9

Project ID: 23-070185-004
Location: #4 - SR-65 & 4th St
City: Wheatland

PEAK HOURS

Day: Tuesday
Date: 9/12/2023

AM

	SR-65 Northbound					SR-65 Southbound					4th St Eastbound					4th St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
7:00 AM	1	241	0	0	242	14	223	0	0	237	0	0	0	0	0	1	0	16	0	17	496
7:15 AM	4	244	1	0	249	6	235	0	0	241	0	0	0	0	0	0	0	25	0	25	515
7:30 AM	2	204	2	0	208	15	211	0	0	226	0	0	0	0	0	0	0	48	0	48	482
7:45 AM	3	200	0	0	203	22	171	1	0	194	0	0	1	0	1	1	0	32	0	33	431
Total Volume	10	889	3	0	902	57	840	1	0	898	0	0	1	0	1	2	0	121	0	123	1924
% App. Total	1.1	98.6	0.3	0.0	100	6.3	93.5	0.1	0.0	100	0.0	0.0	100.0	0.0	100	1.6	0.0	98.4	0.0	100	
PHF					0.906					0.932					0.250					0.641	0.934
Cars, PU, Vans	10	821	3	0	834	54	756	1	0	811	0	0	1	0	1	2	0	120	0	122	1768
% Cars, PU, Vans	100.0	92.4	100.0	0.0	92.5	94.7	90.0	100.0	0.0	90.3	0.0	0.0	100.0	0.0	100.0	100.0	0.0	99.2	0.0	99.2	91.9
Heavy trucks	0	68	0	0	68	3	84	0	0	87	0	0	0	0	0	0	0	1	0	1	156
%Heavy trucks	0.0	7.6	0.0	0.0	7.5	5.3	10.0	0.0	0.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.8	8.1

PM

	SR-65 Northbound					SR-65 Southbound					4th St Eastbound					4th St Westbound					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	0	227	1	0	228	17	216	1	0	234	0	0	0	0	0	3	0	26	0	29	491
4:45 PM	1	220	0	0	221	14	221	0	0	235	0	0	0	0	0	0	0	28	0	28	484
5:00 PM	5	220	0	0	225	13	228	3	0	244	0	0	0	0	0	1	0	14	0	15	484
5:15 PM	2	233	0	0	235	20	229	2	0	251	1	0	0	0	1	0	0	19	0	19	506
Total Volume	8	900	1	0	909	64	894	6	0	964	1	0	0	0	1	4	0	87	0	91	1965
% App. Total	0.9	99.0	0.1	0.0	100	6.6	92.7	0.6	0.0	100	100.0	0.0	0.0	0.0	100	4.4	0.0	95.6	0.0	100	
PHF					0.967					0.960					0.250					0.784	0.971
Cars, PU, Vans	8	865	1	0	874	63	856	6	0	925	1	0	0	0	1	4	0	87	0	91	1891
% Cars, PU, Vans	100.0	96.1	100.0	0.0	96.1	98.4	95.7	100.0	0.0	96.0	100.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	0.0	100.0	96.2
Heavy trucks	0	35	0	0	35	1	38	0	0	39	0	0	0	0	0	0	0	0	0	0	74
%Heavy trucks	0.0	3.9	0.0	0.0	3.9	1.6	4.3	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8

File Name: 23-070185-004
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				4th St Westbound				SR-65 Northbound				4th St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	496
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1011
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1493
7:00 AM	14	223	0	0	1	0	16	0	1	241	0	0	0	0	0	0	1924
7:15 AM	6	235	0	0	0	0	25	0	4	244	1	0	0	0	0	0	1869
7:30 AM	15	211	0	0	0	0	48	0	2	204	2	0	0	0	0	0	1765
7:45 AM	22	171	1	0	1	0	32	0	3	200	0	0	0	0	1	0	1646
8:00 AM	18	185	1	0	1	0	28	0	5	203	0	0	0	0	0	0	1543
8:15 AM	17	213	2	0	1	0	15	0	3	159	1	0	0	0	0	0	1102
8:30 AM	8	189	1	0	0	0	15	0	0	149	0	0	0	0	1	0	691
8:45 AM	15	147	1	0	1	0	12	0	1	151	0	0	0	0	0	0	328
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	479
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	949
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1440
4:00 PM	21	202	0	0	0	0	24	0	3	228	1	0	0	0	0	0	1924
4:15 PM	14	216	0	0	0	0	22	0	0	218	0	0	0	0	0	0	1929
4:30 PM	17	216	1	0	3	0	26	0	0	227	1	0	0	0	0	0	1965
4:45 PM	14	221	0	0	0	0	28	0	1	220	0	0	0	0	0	0	1954
5:00 PM	13	228	3	0	1	0	14	0	5	220	0	0	0	0	0	0	1941
5:15 PM	20	229	2	0	0	0	19	0	2	233	0	0	1	0	0	0	1457
5:30 PM	18	191	2	0	0	1	26	0	1	241	0	0	0	0	0	0	951
5:45 PM	13	178	3	0	0	0	13	0	3	258	1	0	1	1	0	0	471
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-004
Date : 9/12/2023

All Vehicles & Uturns

	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	14	223	0	0	237	1	0	16	0	17	1	241	0	0	242	0	0	0	0	0	496	0
7:15	6	235	0	0	241	0	0	25	0	25	4	244	1	0	249	0	0	0	0	0	515	0
7:30	15	211	0	0	226	0	0	48	0	48	2	204	2	0	208	0	0	0	0	0	482	0
7:45	22	171	1	0	194	1	0	32	0	33	3	200	0	0	203	0	0	1	0	1	431	0
Total	57	840	1	0	898	2	0	121	0	123	10	889	3	0	902	0	0	1	0	1	1924	0
8:00	18	185	1	0	204	1	0	28	0	29	5	203	0	0	208	0	0	0	0	0	441	0
8:15	17	213	2	0	232	1	0	15	0	16	3	159	1	0	163	0	0	0	0	0	411	0
8:30	8	189	1	0	198	0	0	15	0	15	0	149	0	0	149	0	0	1	0	1	363	0
8:45	15	147	1	0	163	1	0	12	0	13	1	151	0	0	152	0	0	0	0	0	328	0
Total	58	734	5	0	797	3	0	70	0	73	9	662	1	0	672	0	0	1	0	1	1543	0
16:00	21	202	0	0	223	0	0	24	0	24	3	228	1	0	232	0	0	0	0	0	479	0
16:15	14	216	0	0	230	0	0	22	0	22	0	218	0	0	218	0	0	0	0	0	470	0
16:30	17	216	1	0	234	3	0	26	0	29	0	227	1	0	228	0	0	0	0	0	491	0
16:45	14	221	0	0	235	0	0	28	0	28	1	220	0	0	221	0	0	0	0	0	484	0
Total	66	855	1	0	922	3	0	100	0	103	4	893	2	0	899	0	0	0	0	0	1924	0
17:00	13	228	3	0	244	1	0	14	0	15	5	220	0	0	225	0	0	0	0	0	484	0
17:15	20	229	2	0	251	0	0	19	0	19	2	233	0	0	235	1	0	0	0	1	506	0
17:30	18	191	2	0	211	0	1	26	0	27	1	241	0	0	242	0	0	0	0	0	480	0
17:45	13	178	3	0	194	0	0	13	0	13	3	258	1	0	262	1	1	0	0	2	471	0
Total	64	826	10	0	900	1	1	72	0	74	11	952	1	0	964	2	1	0	0	3	1941	0
Grand Total	245	3255	17	0	3517	9	1	363	0	373	34	3396	7	0	3437	2	1	2	0	5	7332	0
Apprch %	7.0%	92.6%	0.5%	0.0%		2.4%	0.3%	97.3%	0.0%		1.0%	98.8%	0.2%	0.0%		40.0%	20.0%	40.0%	0.0%			
Total %	3.3%	44.4%	0.2%	0.0%	48.0%	0.1%	0.0%	5.0%	0.0%	5.1%	0.5%	46.3%	0.1%	0.0%	46.9%	0.0%	0.0%	0.0%	0.0%	0.1%	100.0%	

AM PEAK HOUR	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	14	223	0	0	237	1	0	16	0	17	1	241	0	0	242	0	0	0	0	0	496
7:15	6	235	0	0	241	0	0	25	0	25	4	244	1	0	249	0	0	0	0	0	515
7:30	15	211	0	0	226	0	0	48	0	48	2	204	2	0	208	0	0	0	0	0	482
7:45	22	171	1	0	194	1	0	32	0	33	3	200	0	0	203	0	0	1	0	1	431
Total Volume	57	840	1	0	898	2	0	121	0	123	10	889	3	0	902	0	0	1	0	1	1924
% App Total	6.3%	93.5%	0.1%	0.0%		1.6%	0.0%	98.4%	0.0%		1.1%	98.6%	0.3%	0.0%		0.0%	0.0%	100.0%	0.0%		
PHF	.648	.894	.250	.000	.932	.500	.000	.630	.000	.641	.625	.911	.375	.000	.906	.000	.000	.250	.000	.250	.934

PM PEAK HOUR	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	17	216	1	0	234	3	0	26	0	29	0	227	1	0	228	0	0	0	0	0	491
16:45	14	221	0	0	235	0	0	28	0	28	1	220	0	0	221	0	0	0	0	0	484
17:00	13	228	3	0	244	1	0	14	0	15	5	220	0	0	225	0	0	0	0	0	484
17:15	20	229	2	0	251	0	0	19	0	19	2	233	0	0	235	1	0	0	0	1	506
Total Volume	64	894	6	0	964	4	0	87	0	91	8	900	1	0	909	1	0	0	0	1	1965
% App Total	6.6%	92.7%	0.6%	0.0%		4.4%	0.0%	95.6%	0.0%		0.9%	99.0%	0.1%	0.0%		100.0%	0.0%	0.0%	0.0%		
PHF	.800	.976	.500	.000	.960	.333	.000	.777	.000	.784	.400	.966	.250	.000	.967	.250	.000	.000	.000	.250	.971

File Name: 23-070185-004
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				4th St Westbound				SR-65 Northbound				4th St Eastbound				
Start Time	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-004
Date : 9/12/2023

All Bikes and Peds

	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1	2
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	0	0	0	0	0	0	0	5	0	0	1	0	0	1	0	0	0	2	0	1	7
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	1	0	1
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.250	.000		.250	.000	.000	.000		.000	.250

PM PEAK HOUR	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

File Name: 23-070185-004
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				4th St Westbound				SR-65 Northbound				4th St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125
7:00 AM	2	33	0	0	0	0	1	0	0	14	0	0	0	0	0	0	156
7:15 AM	0	15	0	0	0	0	0	0	0	12	0	0	0	0	0	0	142
7:30 AM	1	20	0	0	0	0	0	0	0	27	0	0	0	0	0	0	157
7:45 AM	0	16	0	0	0	0	0	0	0	15	0	0	0	0	0	0	144
8:00 AM	0	15	0	0	0	0	0	0	0	21	0	0	0	0	0	0	142
8:15 AM	1	19	0	0	0	0	2	0	0	20	0	0	0	0	0	0	106
8:30 AM	0	13	0	0	0	0	0	0	0	22	0	0	0	0	0	0	64
8:45 AM	0	17	0	0	0	0	0	0	0	12	0	0	0	0	0	0	29
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71
4:00 PM	0	4	0	0	0	0	1	0	0	11	0	0	0	0	0	0	88
4:15 PM	0	10	0	0	0	0	0	0	0	17	0	0	0	0	0	0	90
4:30 PM	1	15	0	0	0	0	0	0	0	12	0	0	0	0	0	0	74
4:45 PM	0	7	0	0	0	0	0	0	0	10	0	0	0	0	0	0	57
5:00 PM	0	11	0	0	0	0	0	0	0	7	0	0	0	0	0	0	47
5:15 PM	0	5	0	0	0	0	0	0	0	6	0	0	0	0	0	0	29
5:30 PM	0	7	0	0	0	0	0	0	0	4	0	0	0	0	0	0	18
5:45 PM	0	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	7
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-004
Date : 9/12/2023

All HT & Uturns

	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	2	33	0	0	35	0	0	1	0	1	0	14	0	0	14	0	0	0	0	0	50	0
7:15	0	15	0	0	15	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	27	0
7:30	1	20	0	0	21	0	0	0	0	0	0	27	0	0	27	0	0	0	0	0	48	0
7:45	0	16	0	0	16	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	31	0
Total	3	84	0	0	87	0	0	1	0	1	0	68	0	0	68	0	0	0	0	0	156	0
8:00	0	15	0	0	15	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	36	0
8:15	1	19	0	0	20	0	0	2	0	2	0	20	0	0	20	0	0	0	0	0	42	0
8:30	0	13	0	0	13	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	35	0
8:45	0	17	0	0	17	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	29	0
Total	1	64	0	0	65	0	0	2	0	2	0	75	0	0	75	0	0	0	0	0	142	0
16:00	0	4	0	0	4	0	0	1	0	1	0	11	0	0	11	0	0	0	0	0	16	0
16:15	0	10	0	0	10	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	27	0
16:30	1	15	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28	0
16:45	0	7	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17	0
Total	1	36	0	0	37	0	0	1	0	1	0	50	0	0	50	0	0	0	0	0	88	0
17:00	0	11	0	0	11	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	18	0
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	0
17:30	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	11	0
17:45	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7	0
Total	0	25	0	0	25	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	47	0
Grand Total	5	209	0	0	214	0	0	4	0	4	0	215	0	0	215	0	0	0	0	0	433	0
Apprch %	2.3%	97.7%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	1.2%	48.3%	0.0%	0.0%	49.4%	0.0%	0.0%	0.9%	0.0%	0.9%	0.0%	49.7%	0.0%	0.0%	49.7%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	2	33	0	0	35	0	0	1	0	1	0	14	0	0	14	0	0	0	0	0	50
7:15	0	15	0	0	15	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	27
7:30	1	20	0	0	21	0	0	0	0	0	0	27	0	0	27	0	0	0	0	0	48
7:45	0	16	0	0	16	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	31
Total Volume	3	84	0	0	87	0	0	1	0	1	0	68	0	0	68	0	0	0	0	0	156
% App Total	3.4%	96.6%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.375	.636	.000	.000	.621	.000	.000	.250	.000	.250	.000	.630	.000	.000	.630	.000	.000	.000	.000	.000	.780

PM PEAK HOUR	SR-65 Southbound					4th St Westbound					SR-65 Northbound					4th St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	1	15	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28
16:45	0	7	0	0	7	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	17
17:00	0	11	0	0	11	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	18
17:15	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11
Total Volume	1	38	0	0	39	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	74
% App Total	2.6%	97.4%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.250	.633	.000	.000	.609	.000	.000	.000	.000	.000	.000	.729	.000	.000	.729	.000	.000	.000	.000	.000	.661

National Data & Surveying Services

Intersection Turning Movement Count

Location: #5 - SR-65 & Main St
City: Wheatland
Control: Signalized

Project ID: 23-070185-005
Date: 9/12/2023

Data - Total

NS/EW Streets:	SR-65				SR-65				Main St				Main St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	237	25	0	3	223	1	0	1	1	5	0	29	2	9	0	536
7:15 AM	0	230	9	0	1	230	1	0	0	4	1	0	28	3	15	0	522
7:30 AM	2	186	4	0	8	204	1	0	1	17	5	0	31	10	26	0	495
7:45 AM	0	182	7	0	8	164	0	0	1	13	12	0	23	8	14	0	432
8:00 AM	0	192	11	0	9	177	0	0	2	17	14	0	21	4	15	0	462
8:15 AM	0	152	1	0	7	207	1	0	0	4	5	0	25	4	10	0	416
8:30 AM	0	141	6	0	8	183	1	0	0	6	7	0	27	2	7	0	388
8:45 AM	0	142	4	0	6	140	0	0	0	2	1	0	21	1	10	0	327
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	1462	67	0	50	1528	5	0	5	64	50	0	205	34	106	0	3578
APPROACH %'s :	0.13%	95.49%	4.38%	0.00%	3.16%	96.53%	0.32%	0.00%	4.20%	53.78%	42.02%	0.00%	59.42%	9.86%	30.72%	0.00%	
PEAK HR :	07:00 am - 08:00 am																TOTAL
PEAK HR VOL :	2	835	45	0	20	821	3	0	3	35	23	0	111	23	64	0	1985
PEAK HR FACTOR :	0.250	0.881	0.450	0.000	0.625	0.892	0.750	0.000	0.750	0.515	0.479	0.000	0.895	0.575	0.615	0.000	0.926
	0.842				0.909				0.587				0.739				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	204	0	0	14	184	5	0	7	13	6	0	41	6	22	0	507
4:15 PM	5	183	0	0	12	193	7	0	12	4	12	0	70	6	21	0	525
4:30 PM	5	214	1	0	11	205	7	0	8	8	3	0	67	1	10	0	540
4:45 PM	8	196	0	0	9	200	7	0	12	9	8	0	75	2	9	0	535
5:00 PM	5	215	3	0	14	207	11	0	4	6	1	0	71	2	12	0	551
5:15 PM	5	212	0	0	17	197	16	0	7	8	6	0	37	7	11	0	523
5:30 PM	7	215	2	0	12	167	11	0	10	6	2	0	35	8	22	0	497
5:45 PM	9	236	0	0	10	155	8	0	9	16	6	0	21	3	15	0	488
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	49	1675	6	0	99	1508	72	0	69	70	44	0	417	35	122	0	4166
APPROACH %'s :	2.83%	96.82%	0.35%	0.00%	5.90%	89.82%	4.29%	0.00%	37.70%	38.25%	24.04%	0.00%	72.65%	6.10%	21.25%	0.00%	
PEAK HR :	04:15 pm - 05:15 pm																TOTAL
PEAK HR VOL :	23	808	4	0	46	805	32	0	36	27	24	0	283	11	52	0	2151
PEAK HR FACTOR :	0.719	0.940	0.333	0.000	0.821	0.972	0.727	0.000	0.750	0.750	0.500	0.000	0.943	0.458	0.619	0.000	0.976
	0.936				0.952				0.750				0.892				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #5 - SR-65 & Main St
City: Wheatland
Control: Signalized

Project ID: 23-070185-005
Date: 9/12/2023

Data - Cars

NS/EW Streets:	SR-65				SR-65				Main St				Main St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	224	24	0	2	190	1	0	0	0	5	0	28	2	9	0	485
7:15 AM	0	217	9	0	1	216	0	0	0	4	1	0	28	3	15	0	494
7:30 AM	2	161	4	0	6	187	1	0	0	16	5	0	31	7	26	0	446
7:45 AM	0	167	7	0	8	147	0	0	1	12	12	0	23	7	14	0	398
8:00 AM	0	172	10	0	9	164	0	0	2	17	14	0	20	4	14	0	426
8:15 AM	0	132	1	0	6	187	1	0	0	4	5	0	24	4	10	0	374
8:30 AM	0	120	6	0	8	170	1	0	0	6	7	0	26	1	6	0	351
8:45 AM	0	130	4	0	4	126	0	0	0	2	1	0	20	1	10	0	298
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	1323	65	0	44	1387	4	0	3	61	50	0	200	29	104	0	3272
APPROACH %'s :	0.14%	95.18%	4.68%	0.00%	3.07%	96.66%	0.28%	0.00%	2.63%	53.51%	43.86%	0.00%	60.06%	8.71%	31.23%	0.00%	
PEAK HR :	07:00 am - 08:00 am																TOTAL
PEAK HR VOL :	2	769	44	0	17	740	2	0	1	32	23	0	110	19	64	0	1823
PEAK HR FACTOR :	0.250	0.858	0.458	0.000	0.531	0.856	0.500	0.000	0.250	0.500	0.479	0.000	0.887	0.679	0.615	0.000	
	0.822				0.874				0.560				0.754				0.923

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	194	0	0	14	179	5	0	7	13	6	0	40	5	22	0	490
4:15 PM	5	172	0	0	12	184	7	0	11	4	12	0	69	5	16	0	497
4:30 PM	5	202	1	0	8	192	7	0	8	8	3	0	67	1	10	0	512
4:45 PM	8	187	0	0	8	194	7	0	12	9	8	0	74	2	8	0	517
5:00 PM	5	208	3	0	14	198	11	0	4	6	1	0	71	2	12	0	535
5:15 PM	5	207	0	0	16	192	15	0	7	8	6	0	35	7	10	0	508
5:30 PM	7	211	1	0	10	162	11	0	10	6	2	0	35	8	22	0	485
5:45 PM	9	231	0	0	10	153	8	0	9	16	6	0	21	3	15	0	481
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	49	1612	5	0	92	1454	71	0	68	70	44	0	412	33	115	0	4025
APPROACH %'s :	2.94%	96.76%	0.30%	0.00%	5.69%	89.92%	4.39%	0.00%	37.36%	38.46%	24.18%	0.00%	73.57%	5.89%	20.54%	0.00%	
PEAK HR :	04:15 pm - 05:15 pm																TOTAL
PEAK HR VOL :	23	769	4	0	42	768	32	0	35	27	24	0	281	10	46	0	2061
PEAK HR FACTOR :	0.719	0.924	0.333	0.000	0.750	0.970	0.727	0.000	0.729	0.750	0.500	0.000	0.949	0.500	0.719	0.000	
	0.921				0.944				0.741				0.936				0.963

National Data & Surveying Services

Intersection Turning Movement Count

Location: #5 - SR-65 & Main St
City: Wheatland
Control: Signalized

Project ID: 23-070185-005
Date: 9/12/2023

Data - HT

NS/EW Streets:	SR-65				SR-65				Main St				Main St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	13	1	0	1	33	0	0	1	1	0	0	1	0	0	0	51
7:15 AM	0	13	0	0	0	14	1	0	0	0	0	0	0	0	0	0	28
7:30 AM	0	25	0	0	2	17	0	0	1	1	0	0	0	3	0	0	49
7:45 AM	0	15	0	0	0	17	0	0	0	1	0	0	0	1	0	0	34
8:00 AM	0	20	1	0	0	13	0	0	0	0	0	0	1	0	1	0	36
8:15 AM	0	20	0	0	1	20	0	0	0	0	0	0	1	0	0	0	42
8:30 AM	0	21	0	0	0	13	0	0	0	0	0	0	1	1	1	0	37
8:45 AM	0	12	0	0	2	14	0	0	0	0	0	0	1	0	0	0	29
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	139	2	0	6	141	1	0	2	3	0	0	5	5	2	0	306
APPROACH %'s :	0.00%	98.58%	1.42%	0.00%	4.05%	95.27%	0.68%	0.00%	40.00%	60.00%	0.00%	0.00%	41.67%	41.67%	16.67%	0.00%	
PEAK HR :	07:00 am - 08:00 am																TOTAL
PEAK HR VOL :	0	66	1	0	3	81	1	0	2	3	0	0	1	4	0	0	162
PEAK HR FACTOR :	0.000	0.660	0.250	0.000	0.375	0.614	0.250	0.000	0.500	0.750	0.000	0.000	0.250	0.333	0.000	0.000	0.794
	0.670				0.625				0.625				0.417				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	10	0	0	0	5	0	0	0	0	0	0	1	1	0	0	17
4:15 PM	0	11	0	0	0	9	0	0	1	0	0	0	1	1	5	0	28
4:30 PM	0	12	0	0	3	13	0	0	0	0	0	0	0	0	0	0	28
4:45 PM	0	9	0	0	1	6	0	0	0	0	0	0	1	0	1	0	18
5:00 PM	0	7	0	0	0	9	0	0	0	0	0	0	0	0	0	0	16
5:15 PM	0	5	0	0	1	5	1	0	0	0	0	0	2	0	1	0	15
5:30 PM	0	4	1	0	2	5	0	0	0	0	0	0	0	0	0	0	12
5:45 PM	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	63	1	0	7	54	1	0	1	0	0	0	5	2	7	0	141
APPROACH %'s :	0.00%	98.44%	1.56%	0.00%	11.29%	87.10%	1.61%	0.00%	100.00%	0.00%	0.00%	0.00%	35.71%	14.29%	50.00%	0.00%	
PEAK HR :	04:15 pm - 05:15 pm																TOTAL
PEAK HR VOL :	0	39	0	0	4	37	0	0	1	0	0	0	2	1	6	0	90
PEAK HR FACTOR :	0.000	0.813	0.000	0.000	0.333	0.712	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.250	0.300	0.000	0.804
	0.813				0.641				0.250				0.321				

Intersection Turning Movement Count

Location: #5 - SR-65 & Main St
City: Wheatland
Control: Signalized

Project ID: 23-070185-005
Date: 9/12/2023

Data - Bikes

NS/EW Streets:	SR-65				SR-65				Main St				Main St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:00 am - 08:00 am																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333	0.000	0.000	0.333
													0.333				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	1	1	0	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:15 pm - 05:15 pm																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: #5 - SR-65 & Main St
City: Wheatland
Project ID: 23-070185-005
Date: 9/12/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	SR-65		SR-65		Main St		Main St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	0	0	0	1
APPROACH %'s :	0.00%	100.00%							
PEAK HR :	07:00 am - 08:00 am								TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :		0.250							0.250
	0.250								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:15 pm - 05:15 pm								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

#5 - SR-65 & Main St

Peak Hour Turning Movement Count

ID: 23-070185-005
City: Wheatland

Day: Tuesday
Date: 9/12/2023

PEAK HOURS		COUNT PERIODS
AM	07:00 am - 08:00 am	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 pm - 05:15 pm	4:00 PM - 06:00 PM

SR-65

SOUTHBOUND

	↲	↓	↳	⮌	⇧
AM	3	821	20	0	902
NOON	0	0	0	0	0
PM	32	805	46	0	896
	0	1	1	0	

Main St

EASTBOUND

		AM	NOON	PM
⇦		28	0	66
⮌	0	0	0	0
⮥	0.3	3	0	36
→	0.3	35	0	27
↴	0.3	23	0	24

Main St

WESTBOUND

		PM	NOON	AM
⮤	0.3	52	0	64
←	0.3	11	0	23
↙	0.3	283	0	111
⮍	0	0	0	0
⇨		77	0	100

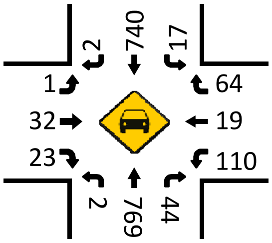
CONTROL			
Signalized			
	AM	NOON	PM
TEV	1985	0	2151
PHF	0.93		0.98

NORTHBOUND

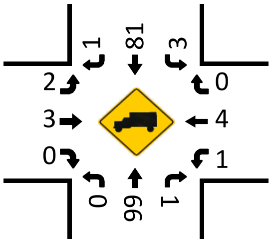
SR-65

	⇩	⮌	↰	↑	↱
		0	1	1	0
PM	1112	0	23	808	4
NOON	0	0	0	0	0
AM	955	0	2	835	45

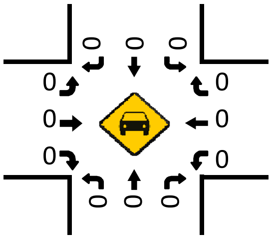
Cars (AM)



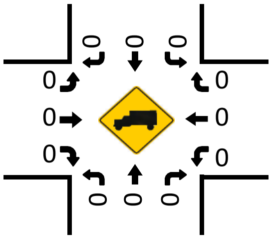
HT (AM)



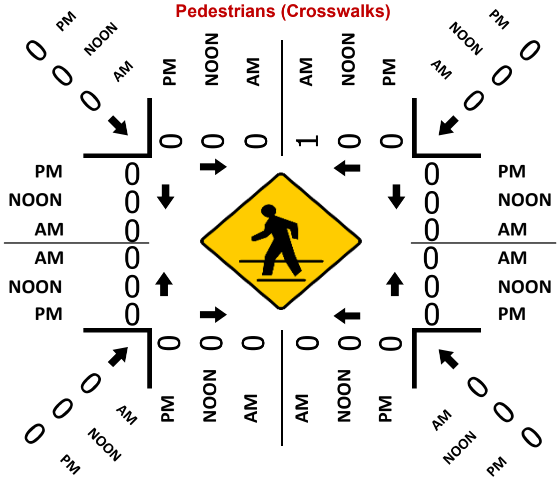
Cars (NOON)



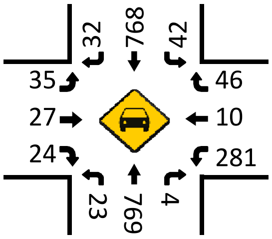
HT (NOON)



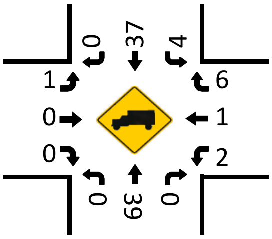
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



File Name: 23-070185-005
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				Main St Westbound				SR-65 Northbound				Main St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	536
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1058
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1553
7:00 AM	3	223	1	0	29	2	9	0	0	237	25	0	1	1	5	0	1985
7:15 AM	1	230	1	0	28	3	15	0	0	230	9	0	0	4	1	0	1911
7:30 AM	8	204	1	0	31	10	26	0	2	186	4	0	1	17	5	0	1805
7:45 AM	8	164	0	0	23	8	14	0	0	182	7	0	1	13	12	0	1698
8:00 AM	9	177	0	0	21	4	15	0	0	192	11	0	2	17	14	0	1593
8:15 AM	7	207	1	0	25	4	10	0	0	152	1	0	0	4	5	0	1131
8:30 AM	8	183	1	0	27	2	7	0	0	141	6	0	0	6	7	0	715
8:45 AM	6	140	0	0	21	1	10	0	0	142	4	0	0	2	1	0	327
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	507
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1032
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1572
4:00 PM	14	184	5	0	41	6	22	0	5	204	0	0	7	13	6	0	2107
4:15 PM	12	193	7	0	70	6	21	0	5	183	0	0	12	4	12	0	2151
4:30 PM	11	205	7	0	67	1	10	0	5	214	1	0	8	8	3	0	2149
4:45 PM	9	200	7	0	75	2	9	0	8	196	0	0	12	9	8	0	2106
5:00 PM	14	207	11	0	71	2	12	0	5	215	3	0	4	6	1	0	2059
5:15 PM	17	197	16	0	37	7	11	0	5	212	0	0	7	8	6	0	1508
5:30 PM	12	167	11	0	35	8	22	0	7	215	2	0	10	6	2	0	985
5:45 PM	10	155	8	0	21	3	15	0	9	236	0	0	9	16	6	0	488
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project ID: 23-070185-005
Location: #5 - SR-65 & Main St
City: Wheatland

Day: Tuesday
Date: 9/12/2023

Groups Printed - Cars, PU, Vans - Heavy Trucks

	SR-65 Northbound						SR-65 Southbound						Main St Eastbound						Main St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	237	25	0	0	262	3	223	1	0	0	227	1	1	5	0	0	7	29	2	9	0	0	40	536
7:15 AM	0	230	9	0	0	239	1	230	1	0	0	232	0	4	1	0	0	5	28	3	15	0	0	46	522
7:30 AM	2	186	4	0	0	192	8	204	1	0	1	213	1	17	5	0	0	23	31	10	26	0	0	67	495
7:45 AM	0	182	7	0	0	189	8	164	0	0	0	172	1	13	12	0	0	26	23	8	14	0	0	45	432
Total	2	835	45	0	0	882	20	821	3	0	1	844	3	35	23	0	0	61	111	23	64	0	0	198	1985
8:00 AM	0	192	11	0	0	203	9	177	0	0	0	186	2	17	14	0	0	33	21	4	15	0	0	40	462
8:15 AM	0	152	1	0	0	153	7	207	1	0	0	215	0	4	5	0	0	9	25	4	10	0	0	39	416
8:30 AM	0	141	6	0	0	147	8	183	1	0	0	192	0	6	7	0	0	13	27	2	7	0	0	36	388
8:45 AM	0	142	4	0	0	146	6	140	0	0	0	146	0	2	1	0	0	3	21	1	10	0	0	32	327
Total	0	627	22	0	0	649	30	707	2	0	0	739	2	29	27	0	0	58	94	11	42	0	0	147	1593
BREAK																									
4:00 PM	5	204	0	0	0	209	14	184	5	0	0	203	7	13	6	0	0	26	41	6	22	0	0	69	507
4:15 PM	5	183	0	0	0	188	12	193	7	0	0	212	12	4	12	0	0	28	70	6	21	0	0	97	525
4:30 PM	5	214	1	0	0	220	11	205	7	0	0	223	8	8	3	0	0	19	67	1	10	0	0	78	540
4:45 PM	8	196	0	0	0	204	9	200	7	0	0	216	12	9	8	0	0	29	75	2	9	0	0	86	535
Total	23	797	1	0	0	821	46	782	26	0	0	854	39	34	29	0	0	102	253	15	62	0	0	330	2107
5:00 PM	5	215	3	0	0	223	14	207	11	0	0	232	4	6	1	0	0	11	71	2	12	0	0	85	551
5:15 PM	5	212	0	0	0	217	17	197	16	0	0	230	7	8	6	0	0	21	37	7	11	0	0	55	523
5:30 PM	7	215	2	0	0	224	12	167	11	0	0	190	10	6	2	0	0	18	35	8	22	0	0	65	497
5:45 PM	9	236	0	0	0	245	10	155	8	0	0	173	9	16	6	0	0	31	21	3	15	0	0	39	488
Total	26	878	5	0	0	909	53	726	46	0	0	825	30	36	15	0	0	81	164	20	60	0	0	244	2059
Grand Total	51	3137	73	0	0	3261	149	3036	77	0	1	3262	74	134	94	0	0	302	622	69	228	0	0	919	7744
Apprch %	1.6	96.2	2.2	0.0	0.0		4.6	93.1	2.4	0.0	0.0		24.5	44.4	31.1	0.0	0.0		67.7	7.5	24.8	0.0	0.0		
Total %	0.7	40.5	0.9	0.0	0.0	42.1	1.9	39.2	1.0	0.0	0.0	42.1	1.0	1.7	1.2	0.0	0.0	3.9	8.0	0.9	2.9	0.0	0.0	11.9	
Cars, PU, Vans	51	2935	70	0		3056	136	2841	75	0		3052	71	131	94	0		296	612	62	219	0		893	7297
% Cars, PU, Vans	100.0	93.6	95.9	0.0		93.7	91.3	93.6	97.4	0.0		93.6	95.9	97.8	100.0	0.0		98.0	98.4	89.9	96.1	0.0		97.2	94.2
Heavy trucks	0	202	3	0		205	13	195	2	0		210	3	3	0	0		6	10	7	9	0		26	447
%Heavy trucks	0.0	6.4	4.1	0.0		6.3	8.7	6.4	2.6	0.0		6.4	4.1	2.2	0.0	0.0		2.0	1.6	10.1	3.9	0.0		2.8	5.8

Project ID: 23-070185-005
Location: #5 - SR-65 & Main St
City: Wheatland

PEAK HOURS

Day: Tuesday
Date: 9/12/2023

AM

	SR-65 Northbound					**SR-65 Southbound**					**Main St Eastbound**					**Main St Westbound**					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
7:00 AM	0	237	25	0	262	3	223	1	0	227	1	1	5	0	7	29	2	9	0	40	536
7:15 AM	0	230	9	0	239	1	230	1	0	232	0	4	1	0	5	28	3	15	0	46	522
7:30 AM	2	186	4	0	192	8	204	1	0	213	1	17	5	0	23	31	10	26	0	67	495
7:45 AM	0	182	7	0	189	8	164	0	0	172	1	13	12	0	26	23	8	14	0	45	432
Total Volume	2	835	45	0	882	20	821	3	0	844	3	35	23	0	61	111	23	64	0	198	1985
% App. Total	0.2	94.7	5.1	0.0	100	2.4	97.3	0.4	0.0	100	4.9	57.4	37.7	0.0	100	56.1	11.6	32.3	0.0	100	
PHF					0.842					0.909					0.587					0.739	0.926
Cars, PU, Vans	2	769	44	0	815	17	740	2	0	759	1	32	23	0	56	110	19	64	0	193	1823
% Cars, PU, Vans	100.0	92.1	97.8	0.0	92.4	85.0	90.1	66.7	0.0	89.9	33.3	91.4	100.0	0.0	91.8	99.1	82.6	100.0	0.0	97.5	91.8
Heavy trucks	0	66	1	0	67	3	81	1	0	85	2	3	0	0	5	1	4	0	0	5	162
%Heavy trucks	0.0	7.9	2.2	0.0	7.6	15.0	9.9	33.3	0.0	10.1	66.7	8.6	0.0	0.0	8.2	0.9	17.4	0.0	0.0	2.5	8.2

PM

	SR-65 Northbound					**SR-65 Southbound**					**Main St Eastbound**					**Main St Westbound**					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
4:15 PM	5	183	0	0	188	12	193	7	0	212	12	4	12	0	28	70	6	21	0	97	525
4:30 PM	5	214	1	0	220	11	205	7	0	223	8	8	3	0	19	67	1	10	0	78	540
4:45 PM	8	196	0	0	204	9	200	7	0	216	12	9	8	0	29	75	2	9	0	86	535
5:00 PM	5	215	3	0	223	14	207	11	0	232	4	6	1	0	11	71	2	12	0	85	551
Total Volume	23	808	4	0	835	46	805	32	0	883	36	27	24	0	87	283	11	52	0	346	2151
% App. Total	2.8	96.8	0.5	0.0	100	5.2	91.2	3.6	0.0	100	41.4	31.0	27.6	0.0	100	81.8	3.2	15.0	0.0	100	
PHF					0.936					0.952					0.750					0.892	0.976
Cars, PU, Vans	23	769	4	0	796	42	768	32	0	842	35	27	24	0	86	281	10	46	0	337	2061
% Cars, PU, Vans	100.0	95.2	100.0	0.0	95.3	91.3	95.4	100.0	0.0	95.4	97.2	100.0	100.0	0.0	98.9	99.3	90.9	88.5	0.0	97.4	95.8
Heavy trucks	0	39	0	0	39	4	37	0	0	41	1	0	0	0	1	2	1	6	0	9	90
%Heavy trucks	0.0	4.8	0.0	0.0	4.7	8.7	4.6	0.0	0.0	4.6	2.8	0.0	0.0	0.0	1.1	0.7	9.1	11.5	0.0	2.6	4.2

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-005
Date : 9/12/2023

All Vehicles & Uturns

	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	3	223	1	0	227	29	2	9	0	40	0	237	25	0	262	1	1	5	0	7	536	0
7:15	1	230	1	0	232	28	3	15	0	46	0	230	9	0	239	0	4	1	0	5	522	0
7:30	8	204	1	0	213	31	10	26	0	67	2	186	4	0	192	1	17	5	0	23	495	0
7:45	8	164	0	0	172	23	8	14	0	45	0	182	7	0	189	1	13	12	0	26	432	0
Total	20	821	3	0	844	111	23	64	0	198	2	835	45	0	882	3	35	23	0	61	1985	0
8:00	9	177	0	0	186	21	4	15	0	40	0	192	11	0	203	2	17	14	0	33	462	0
8:15	7	207	1	0	215	25	4	10	0	39	0	152	1	0	153	0	4	5	0	9	416	0
8:30	8	183	1	0	192	27	2	7	0	36	0	141	6	0	147	0	6	7	0	13	388	0
8:45	6	140	0	0	146	21	1	10	0	32	0	142	4	0	146	0	2	1	0	3	327	0
Total	30	707	2	0	739	94	11	42	0	147	0	627	22	0	649	2	29	27	0	58	1593	0
16:00	14	184	5	0	203	41	6	22	0	69	5	204	0	0	209	7	13	6	0	26	507	0
16:15	12	193	7	0	212	70	6	21	0	97	5	183	0	0	188	12	4	12	0	28	525	0
16:30	11	205	7	0	223	67	1	10	0	78	5	214	1	0	220	8	8	3	0	19	540	0
16:45	9	200	7	0	216	75	2	9	0	86	8	196	0	0	204	12	9	8	0	29	535	0
Total	46	782	26	0	854	253	15	62	0	330	23	797	1	0	821	39	34	29	0	102	2107	0
17:00	14	207	11	0	232	71	2	12	0	85	5	215	3	0	223	4	6	1	0	11	551	0
17:15	17	197	16	0	230	37	7	11	0	55	5	212	0	0	217	7	8	6	0	21	523	0
17:30	12	167	11	0	190	35	8	22	0	65	7	215	2	0	224	10	6	2	0	18	497	0
17:45	10	155	8	0	173	21	3	15	0	39	9	236	0	0	245	9	16	6	0	31	488	0
Total	53	726	46	0	825	164	20	60	0	244	26	878	5	0	909	30	36	15	0	81	2059	0
Grand Total	149	3036	77	0	3262	622	69	228	0	919	51	3137	73	0	3261	74	134	94	0	302	7744	0
Apprch %	4.6%	93.1%	2.4%	0.0%		67.7%	7.5%	24.8%	0.0%		1.6%	96.2%	2.2%	0.0%		24.5%	44.4%	31.1%	0.0%			
Total %	1.9%	39.2%	1.0%	0.0%	42.1%	8.0%	0.9%	2.9%	0.0%	11.9%	0.7%	40.5%	0.9%	0.0%	42.1%	1.0%	1.7%	1.2%	0.0%	3.9%	100.0%	

AM PEAK HOUR	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	3	223	1	0	227	29	2	9	0	40	0	237	25	0	262	1	1	5	0	7	536
7:15	1	230	1	0	232	28	3	15	0	46	0	230	9	0	239	0	4	1	0	5	522
7:30	8	204	1	0	213	31	10	26	0	67	2	186	4	0	192	1	17	5	0	23	495
7:45	8	164	0	0	172	23	8	14	0	45	0	182	7	0	189	1	13	12	0	26	432
Total Volume	20	821	3	0	844	111	23	64	0	198	2	835	45	0	882	3	35	23	0	61	1985
% App Total	2.4%	97.3%	0.4%	0.0%		56.1%	11.6%	32.3%	0.0%		0.2%	94.7%	5.1%	0.0%		4.9%	57.4%	37.7%	0.0%		
PHF	.625	.892	.750	.000	.909	.895	.575	.615	.000	.739	.250	.881	.450	.000	.842	.750	.515	.479	.000	.587	.926

PM PEAK HOUR	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	12	193	7	0	212	70	6	21	0	97	5	183	0	0	188	12	4	12	0	28	525
16:30	11	205	7	0	223	67	1	10	0	78	5	214	1	0	220	8	8	3	0	19	540
16:45	9	200	7	0	216	75	2	9	0	86	8	196	0	0	204	12	9	8	0	29	535
17:00	14	207	11	0	232	71	2	12	0	85	5	215	3	0	223	4	6	1	0	11	551
Total Volume	46	805	32	0	883	283	11	52	0	346	23	808	4	0	835	36	27	24	0	87	2151
% App Total	5.2%	91.2%	3.6%	0.0%		81.8%	3.2%	15.0%	0.0%		2.8%	96.8%	0.5%	0.0%		41.4%	31.0%	27.6%	0.0%		
PHF	.821	.972	.727	.000	.952	.943	.458	.619	.000	.892	.719	.940	.333	.000	.936	.750	.750	.500	.000	.750	.976

File Name: 23-070185-005
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				Main St Westbound				SR-65 Northbound				Main St Eastbound				
Start Time	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:30 AM	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	4
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-005
Date : 9/12/2023

All Bikes and Peds

	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	1
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Total	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	1
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4	1
Apprch %	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	1	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
7:45	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	1	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
% App Total	0.0%	0.0%	0.0%			0.0%	100.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.333	.000		.333	.000	.000	.000		.000	.000	.000	.000		.000	.333

PM PEAK HOUR	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

File Name: 23-070185-005
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				Main St Westbound				SR-65 Northbound				Main St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128
7:00 AM	1	33	0	0	1	0	0	0	0	13	1	0	1	1	0	0	162
7:15 AM	0	14	1	0	0	0	0	0	0	13	0	0	0	0	0	0	147
7:30 AM	2	17	0	0	0	3	0	0	0	25	0	0	1	1	0	0	161
7:45 AM	0	17	0	0	0	1	0	0	0	15	0	0	0	1	0	0	149
8:00 AM	0	13	0	0	1	0	1	0	0	20	1	0	0	0	0	0	144
8:15 AM	1	20	0	0	1	0	0	0	0	20	0	0	0	0	0	0	108
8:30 AM	0	13	0	0	1	1	1	0	0	21	0	0	0	0	0	0	66
8:45 AM	2	14	0	0	1	0	0	0	0	12	0	0	0	0	0	0	29
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
4:00 PM	0	5	0	0	1	1	0	0	0	10	0	0	0	0	0	0	91
4:15 PM	0	9	0	0	1	1	5	0	0	11	0	0	1	0	0	0	90
4:30 PM	3	13	0	0	0	0	0	0	0	12	0	0	0	0	0	0	77
4:45 PM	1	6	0	0	1	0	1	0	0	9	0	0	0	0	0	0	61
5:00 PM	0	9	0	0	0	0	0	0	0	7	0	0	0	0	0	0	50
5:15 PM	1	5	1	0	2	0	1	0	0	5	0	0	0	0	0	0	34
5:30 PM	2	5	0	0	0	0	0	0	0	4	1	0	0	0	0	0	19
5:45 PM	0	2	0	0	0	0	0	0	0	5	0	0	0	0	0	0	7
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-005
Date : 9/12/2023

All HT & Uturns

	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	1	33	0	0	34	1	0	0	0	1	0	13	1	0	14	1	1	0	0	2	51	0
7:15	0	14	1	0	15	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	28	0
7:30	2	17	0	0	19	0	3	0	0	3	0	25	0	0	25	1	1	0	0	2	49	0
7:45	0	17	0	0	17	0	1	0	0	1	0	15	0	0	15	0	1	0	0	1	34	0
Total	3	81	1	0	85	1	4	0	0	5	0	66	1	0	67	2	3	0	0	5	162	0
8:00	0	13	0	0	13	1	0	1	0	2	0	20	1	0	21	0	0	0	0	0	36	0
8:15	1	20	0	0	21	1	0	0	0	1	0	20	0	0	20	0	0	0	0	0	42	0
8:30	0	13	0	0	13	1	1	1	0	3	0	21	0	0	21	0	0	0	0	0	37	0
8:45	2	14	0	0	16	1	0	0	0	1	0	12	0	0	12	0	0	0	0	0	29	0
Total	3	60	0	0	63	4	1	2	0	7	0	73	1	0	74	0	0	0	0	0	144	0
16:00	0	5	0	0	5	1	1	0	0	2	0	10	0	0	10	0	0	0	0	0	17	0
16:15	0	9	0	0	9	1	1	5	0	7	0	11	0	0	11	1	0	0	0	1	28	0
16:30	3	13	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28	0
16:45	1	6	0	0	7	1	0	1	0	2	0	9	0	0	9	0	0	0	0	0	18	0
Total	4	33	0	0	37	3	2	6	0	11	0	42	0	0	42	1	0	0	0	1	91	0
17:00	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	16	0
17:15	1	5	1	0	7	2	0	1	0	3	0	5	0	0	5	0	0	0	0	0	15	0
17:30	2	5	0	0	7	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	12	0
17:45	0	2	0	0	2	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	7	0
Total	3	21	1	0	25	2	0	1	0	3	0	21	1	0	22	0	0	0	0	0	50	0
Grand Total	13	195	2	0	210	10	7	9	0	26	0	202	3	0	205	3	3	0	0	6	447	0
Apprch %	6.2%	92.9%	1.0%	0.0%		38.5%	26.9%	34.6%	0.0%		0.0%	98.5%	1.5%	0.0%		50.0%	50.0%	0.0%	0.0%			
Total %	2.9%	43.6%	0.4%	0.0%	47.0%	2.2%	1.6%	2.0%	0.0%	5.8%	0.0%	45.2%	0.7%	0.0%	45.9%	0.7%	0.7%	0.0%	0.0%	1.3%	100.0%	

AM PEAK HOUR	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	1	33	0	0	34	1	0	0	0	1	0	13	1	0	14	1	1	0	0	2	51
7:15	0	14	1	0	15	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	28
7:30	2	17	0	0	19	0	3	0	0	3	0	25	0	0	25	1	1	0	0	2	49
7:45	0	17	0	0	17	0	1	0	0	1	0	15	0	0	15	0	1	0	0	1	34
Total Volume	3	81	1	0	85	1	4	0	0	5	0	66	1	0	67	2	3	0	0	5	162
% App Total	3.5%	95.3%	1.2%	0.0%		20.0%	80.0%	0.0%	0.0%		0.0%	98.5%	1.5%	0.0%		40.0%	60.0%	0.0%	0.0%		
PHF	.375	.614	.250	.000	.625	.250	.333	.000	.000	.417	.000	.660	.250	.000	.670	.500	.750	.000	.000	.625	.794

PM PEAK HOUR	SR-65 Southbound					Main St Westbound					SR-65 Northbound					Main St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	9	0	0	9	1	1	5	0	7	0	11	0	0	11	1	0	0	0	1	28
16:30	3	13	0	0	16	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	28
16:45	1	6	0	0	7	1	0	1	0	2	0	9	0	0	9	0	0	0	0	0	18
17:00	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	16
Total Volume	4	37	0	0	41	2	1	6	0	9	0	39	0	0	39	1	0	0	0	1	90
% App Total	9.8%	90.2%	0.0%	0.0%		22.2%	11.1%	66.7%	0.0%		0.0%	100.0%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		
PHF	.333	.712	.000	.000	.641	.500	.250	.300	.000	.321	.000	.813	.000	.000	.813	.250	.000	.000	.000	.250	.804

National Data & Surveying Services

Intersection Turning Movement Count

Location: #6 - SR-65 & State St
City: Wheatland
Control: 1-Way Stop (WB)

Project ID: 23-070185-006
Date: 9/12/2023

Data - Total

NS/EW Streets:	SR-65				SR-65				State St				State St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	259	84	0	0	255	0	0	0	0	0	0	1	0	0	0	599
7:15 AM	0	243	77	0	0	261	0	0	0	0	0	0	0	0	0	0	581
7:30 AM	0	204	68	0	0	240	0	0	0	0	0	0	1	0	0	0	513
7:45 AM	0	179	45	0	0	198	0	0	0	0	0	0	0	0	0	0	422
8:00 AM	0	205	40	0	0	208	0	0	0	0	0	0	1	0	0	0	454
8:15 AM	0	153	32	0	2	237	0	0	0	0	0	0	1	0	1	0	426
8:30 AM	0	142	12	0	0	219	0	0	0	0	0	0	0	0	0	0	373
8:45 AM	0	154	15	0	0	165	0	0	0	0	0	0	4	0	0	0	338
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1539	373	0	2	1783	0	0	0	0	0	0	8	0	1	0	3706
APPROACH %'s :	0.00%	80.49%	19.51%	0.00%	0.11%	99.89%	0.00%	0.00%					88.89%	0.00%	11.11%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	885	274	0	0	954	0	0	0	0	0	0	2	0	0	0	2115
PEAK HR FACTOR :	0.000	0.854	0.815	0.000	0.000	0.914	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.883
	0.845				0.914								0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	199	33	0	0	224	0	0	0	0	0	0	2	0	0	0	458
4:15 PM	0	196	27	0	0	282	0	0	0	0	0	0	0	0	2	0	507
4:30 PM	0	211	31	0	1	271	0	0	0	0	0	0	4	0	0	0	518
4:45 PM	0	213	20	0	0	286	0	0	0	0	0	0	7	0	0	0	526
5:00 PM	0	214	33	0	0	273	0	0	0	0	0	0	1	0	0	0	521
5:15 PM	0	224	35	0	0	247	0	0	0	0	0	0	1	0	0	0	507
5:30 PM	0	226	41	0	0	200	0	0	0	0	0	0	0	0	0	0	467
5:45 PM	0	240	35	0	0	189	0	0	0	0	0	0	1	0	0	0	465
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1723	255	0	1	1972	0	0	0	0	0	0	16	0	2	0	3969
APPROACH %'s :	0.00%	87.11%	12.89%	0.00%	0.05%	99.95%	0.00%	0.00%					88.89%	0.00%	11.11%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	862	119	0	1	1077	0	0	0	0	0	0	13	0	0	0	2072
PEAK HR FACTOR :	0.000	0.962	0.850	0.000	0.250	0.941	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.000	0.000	0.000	0.985
	0.947				0.942								0.464				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #6 - SR-65 & State St
City: Wheatland
Control: 1-Way Stop (WB)

Project ID: 23-070185-006
Date: 9/12/2023

Data - Cars

NS/EW Streets:	SR-65				SR-65				State St				State St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	245	84	0	0	220	0	0	0	0	0	0	1	0	0	0	550
7:15 AM	0	226	77	0	0	248	0	0	0	0	0	0	0	0	0	0	551
7:30 AM	0	183	68	0	0	222	0	0	0	0	0	0	1	0	0	0	474
7:45 AM	0	164	45	0	0	183	0	0	0	0	0	0	0	0	0	0	392
8:00 AM	0	184	40	0	0	192	0	0	0	0	0	0	1	0	0	0	417
8:15 AM	0	130	32	0	2	220	0	0	0	0	0	0	1	0	1	0	386
8:30 AM	0	124	12	0	0	201	0	0	0	0	0	0	0	0	0	0	337
8:45 AM	0	140	15	0	0	150	0	0	0	0	0	0	4	0	0	0	309
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1396	373	0	2	1636	0	0	0	0	0	0	8	0	1	0	3416
APPROACH %'s :	0.00%	78.91%	21.09%	0.00%	0.12%	99.88%	0.00%	0.00%					88.89%	0.00%	11.11%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	0	818	274	0	0	873	0	0	0	0	0	0	2	0	0	0	1967
PEAK HR FACTOR :	0.000	0.835	0.815	0.000	0.000	0.880	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.892
	0.830				0.880								0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	190	32	0	0	221	0	0	0	0	0	0	2	0	0	0	445
4:15 PM	0	185	27	0	0	269	0	0	0	0	0	0	0	0	2	0	483
4:30 PM	0	198	31	0	1	259	0	0	0	0	0	0	4	0	0	0	493
4:45 PM	0	203	20	0	0	278	0	0	0	0	0	0	7	0	0	0	508
5:00 PM	0	209	33	0	0	265	0	0	0	0	0	0	1	0	0	0	508
5:15 PM	0	218	33	0	0	239	0	0	0	0	0	0	1	0	0	0	491
5:30 PM	0	222	41	0	0	197	0	0	0	0	0	0	0	0	0	0	460
5:45 PM	0	235	35	0	0	185	0	0	0	0	0	0	1	0	0	0	456
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1660	252	0	1	1913	0	0	0	0	0	0	16	0	2	0	3844
APPROACH %'s :	0.00%	86.82%	13.18%	0.00%	0.05%	99.95%	0.00%	0.00%					88.89%	0.00%	11.11%	0.00%	
PEAK HR :	**04:30 PM - 05:30 PM**																TOTAL
PEAK HR VOL :	0	828	117	0	1	1041	0	0	0	0	0	0	13	0	0	0	2000
PEAK HR FACTOR :	0.000	0.950	0.886	0.000	0.250	0.936	0.000	0.000	0.000	0.000	0.000	0.000	0.464	0.000	0.000	0.000	0.984
	0.941				0.937								0.464				

National Data & Surveying Services

Intersection Turning Movement Count

Location: #6 - SR-65 & State St
City: Wheatland
Control: 1-Way Stop (WB)

Project ID: 23-070185-006
Date: 9/12/2023

Data - HT

NS/EW Streets:	SR-65				SR-65				State St				State St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	14	0	0	0	35	0	0	0	0	0	0	0	0	0	0	49
7:15 AM	0	17	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30
7:30 AM	0	21	0	0	0	18	0	0	0	0	0	0	0	0	0	0	39
7:45 AM	0	15	0	0	0	15	0	0	0	0	0	0	0	0	0	0	30
8:00 AM	0	21	0	0	0	16	0	0	0	0	0	0	0	0	0	0	37
8:15 AM	0	23	0	0	0	17	0	0	0	0	0	0	0	0	0	0	40
8:30 AM	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	36
8:45 AM	0	14	0	0	0	15	0	0	0	0	0	0	0	0	0	0	29
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	143	0	0	0	147	0	0	0	0	0	0	0	0	0	0	290
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	67	0	0	0	81	0	0	0	0	0	0	0	0	0	0	148
PEAK HR FACTOR :	0.000	0.798	0.000	0.000	0.000	0.579	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		0.798				0.579											0.755

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	9	1	0	0	3	0	0	0	0	0	0	0	0	0	0	13
4:15 PM	0	11	0	0	0	13	0	0	0	0	0	0	0	0	0	0	24
4:30 PM	0	13	0	0	0	12	0	0	0	0	0	0	0	0	0	0	25
4:45 PM	0	10	0	0	0	8	0	0	0	0	0	0	0	0	0	0	18
5:00 PM	0	5	0	0	0	8	0	0	0	0	0	0	0	0	0	0	13
5:15 PM	0	6	2	0	0	8	0	0	0	0	0	0	0	0	0	0	16
5:30 PM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
5:45 PM	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	63	3	0	0	59	0	0	0	0	0	0	0	0	0	0	125
APPROACH %'s :	0.00%	95.45%	4.55%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	34	2	0	0	36	0	0	0	0	0	0	0	0	0	0	72
PEAK HR FACTOR :	0.000	0.654	0.250	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
		0.692				0.750											0.720

National Data & Surveying Services

Intersection Turning Movement Count

Location: #6 - SR-65 & State St
City: Wheatland
Control: 1-Way Stop (WB)

Project ID: 23-070185-006
Date: 9/12/2023

Data - Bikes

NS/EW Streets:	SR-65				SR-65				State St				State St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services

Intersection Turning Movement Count

Location: #6 - SR-65 & State St **Project ID:** 23-070185-006
City: Wheatland **Date:** 9/12/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	SR-65		SR-65		State St		State St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0
APPROACH %'s :									
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

Prepared by National Data & Surveying Services

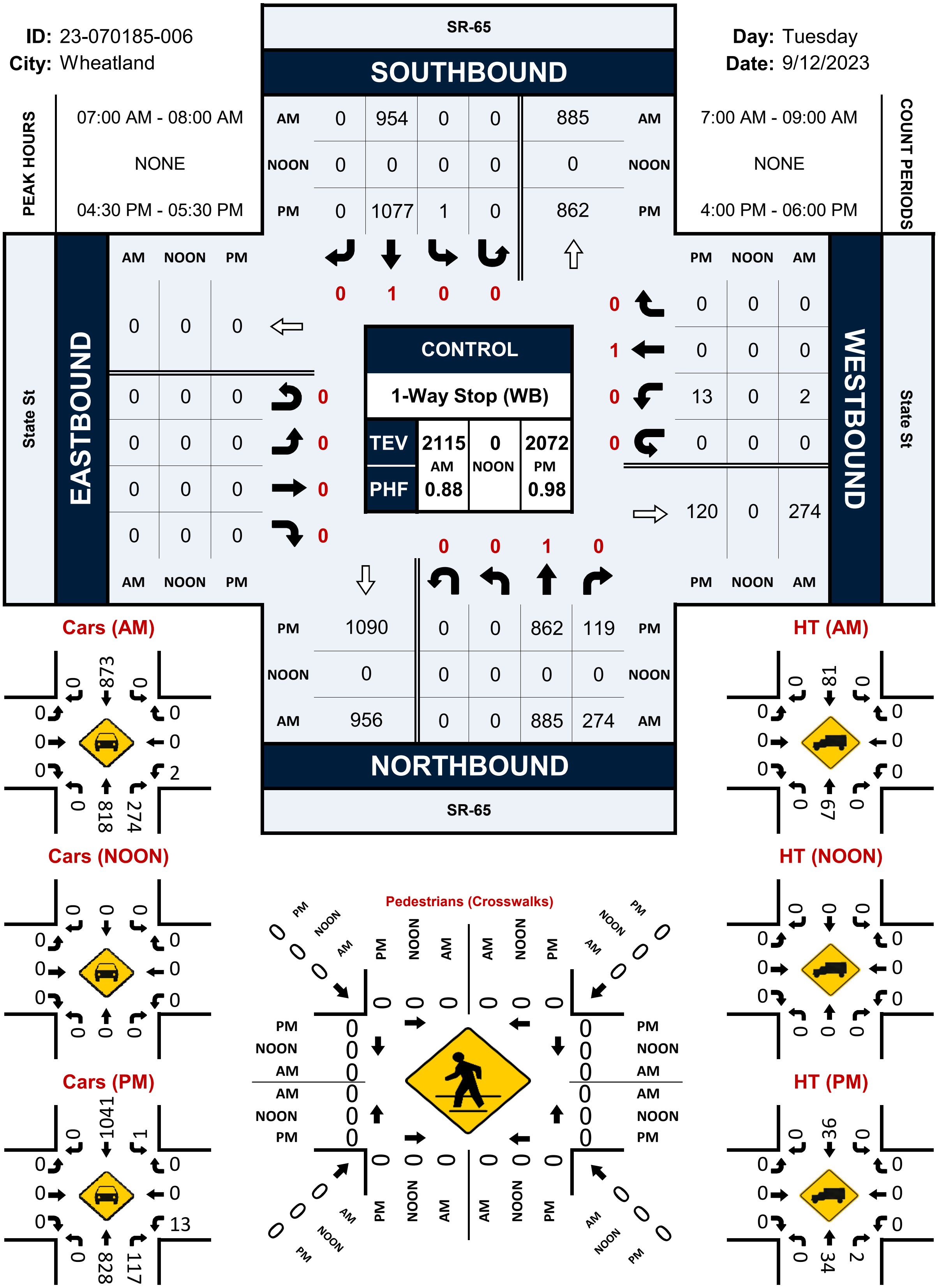
#6 - SR-65 & State St

Peak Hour Turning Movement Count

ID: 23-070185-006
City: Wheatland

Day: Tuesday
Date: 9/12/2023

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM



SR-65 SOUTHBOUND

	↲	↓	↳	U	⇧
AM	0	954	0	0	885
NOON	0	0	0	0	0
PM	0	1077	1	0	862
	0	1	0	0	

State St WESTBOUND

		PM	NOON	AM
0	U	0	0	0
1	←	0	0	0
0	↙	13	0	2
0	U	0	0	0
	⇨	120	0	274

State St EASTBOUND

AM	NOON	PM		
0	0	0	⇦	
0	0	0	U	0
0	0	0	↱	0
0	0	0	→	0
0	0	0	↴	0

SR-65 NORTHBOUND

		0	0	1	0
	⇩	U	↰	↑	↱
PM	1090	0	0	862	119
NOON	0	0	0	0	0
AM	956	0	0	885	274

CONTROL

1-Way Stop (WB)

	AM	NOON	PM
TEV	2115	0	2072
PHF	0.88		0.98

Pedestrians (Crosswalks): all crosswalk counts 0 (AM, NOON, PM).

Project ID: 23-070185-006
Location: #6 - SR-65 & State St
City: Wheatland

Day: Tuesday
Date: 9/12/2023

Groups Printed - Cars, PU, Vans - Heavy Trucks

	SR-65 Northbound						SR-65 Southbound						State St Eastbound						State St Westbound						
Start Time	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Int. Total
7:00 AM	0	259	84	0	0	343	0	255	0	0	0	255	0	0	0	0	0	0	1	0	0	0	0	1	599
7:15 AM	0	243	77	0	0	320	0	261	0	0	0	261	0	0	0	0	0	0	0	0	0	0	0	0	581
7:30 AM	0	204	68	0	0	272	0	240	0	0	0	240	0	0	0	0	0	0	1	0	0	0	0	1	513
7:45 AM	0	179	45	0	0	224	0	198	0	0	0	198	0	0	0	0	0	0	0	0	0	0	0	0	422
Total	0	885	274	0	0	1159	0	954	0	0	0	954	0	0	0	0	0	0	2	0	0	0	0	2	2115
8:00 AM	0	205	40	0	0	245	0	208	0	0	0	208	0	0	0	0	0	0	1	0	0	0	0	1	454
8:15 AM	0	153	32	0	0	185	2	237	0	0	0	239	0	0	0	0	0	0	1	0	1	0	0	2	426
8:30 AM	0	142	12	0	0	154	0	219	0	0	0	219	0	0	0	0	0	0	0	0	0	0	0	0	373
8:45 AM	0	154	15	0	0	169	0	165	0	0	0	165	0	0	0	0	0	0	4	0	0	0	0	4	338
Total	0	654	99	0	0	753	2	829	0	0	0	831	0	0	0	0	0	0	6	0	1	0	0	7	1591
BREAK																									
4:00 PM	0	199	33	0	0	232	0	224	0	0	0	224	0	0	0	0	0	0	2	0	0	0	0	2	458
4:15 PM	0	196	27	0	0	223	0	282	0	0	0	282	0	0	0	0	0	0	0	0	2	0	0	2	507
4:30 PM	0	211	31	0	0	242	1	271	0	0	0	272	0	0	0	0	0	0	4	0	0	0	0	4	518
4:45 PM	0	213	20	0	0	233	0	286	0	0	0	286	0	0	0	0	0	0	7	0	0	0	0	7	526
Total	0	819	111	0	0	930	1	1063	0	0	0	1064	0	0	0	0	0	0	13	0	2	0	0	15	2009
5:00 PM	0	214	33	0	0	247	0	273	0	0	0	273	0	0	0	0	0	0	1	0	0	0	0	1	521
5:15 PM	0	224	35	0	0	259	0	247	0	0	0	247	0	0	0	0	0	0	1	0	0	0	0	1	507
5:30 PM	0	226	41	0	0	267	0	200	0	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	467
5:45 PM	0	240	35	0	0	275	0	189	0	0	0	189	0	0	0	0	0	0	1	0	0	0	0	1	465
Total	0	904	144	0	0	1048	0	909	0	0	0	909	0	0	0	0	0	0	3	0	0	0	0	3	1960
Grand Total	0	3262	628	0	0	3890	3	3755	0	0	0	3758	0	0	0	0	0	0	24	0	3	0	0	27	7675
Apprch %	0.0	83.9	16.1	0.0	0.0		0.1	99.9	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		88.9	0.0	11.1	0.0	0.0		
Total %	0.0	42.5	8.2	0.0	0.0	50.7	0.0	48.9	0.0	0.0	0.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.4	
Cars, PU, Vans	0	3056	625	0		3681	3	3549	0	0		3552	0	0	0	0		0	24	0	3	0		27	7260
% Cars, PU, Vans	0.0	93.7	99.5	0.0		94.6	100.0	94.5	0.0	0.0		94.5	0.0	0.0	0.0	0.0		0.0	100.0	0.0	100.0	0.0		100.0	94.6
Heavy trucks	0	206	3	0		209	0	206	0	0		206	0	0	0	0		0	0	0	0	0		0	415
%Heavy trucks	0.0	6.3	0.5	0.0		5.4	0.0	5.5	0.0	0.0		5.5	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	5.4

Project ID: 23-070185-006
Location: #6 - SR-65 & State St
City: Wheatland

PEAK HOURS

Day: Tuesday
Date: 9/12/2023

AM

	SR-65 Northbound					**SR-65 Southbound**					**State St Eastbound**					**State St Westbound**					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
7:00 AM	0	259	84	0	343	0	255	0	0	255	0	0	0	0	0	1	0	0	0	1	599
7:15 AM	0	243	77	0	320	0	261	0	0	261	0	0	0	0	0	0	0	0	0	0	581
7:30 AM	0	204	68	0	272	0	240	0	0	240	0	0	0	0	0	1	0	0	0	1	513
7:45 AM	0	179	45	0	224	0	198	0	0	198	0	0	0	0	0	0	0	0	0	0	422
Total Volume	0	885	274	0	1159	0	954	0	0	954	0	0	0	0	0	2	0	0	0	2	2115
% App. Total	0.0	76.4	23.6	0.0	100	0.0	100.0	0.0	0.0	100	0.0	0.0	0.0	0.0	0	100.0	0.0	0.0	0.0	100	
PHF					0.845					0.914										0.500	0.883
Cars, PU, Vans	0	818	274	0	1092	0	873	0	0	873	0	0	0	0	0	2	0	0	0	2	1967
% Cars, PU, Vans	0.0	92.4	100.0	0.0	94.2	0.0	91.5	0.0	0.0	91.5	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	93.0
Heavy trucks	0	67	0	0	67	0	81	0	0	81	0	0	0	0	0	0	0	0	0	0	148
%Heavy trucks	0.0	7.6	0.0	0.0	5.8	0.0	8.5	0.0	0.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0

PM

	SR-65 Northbound					**SR-65 Southbound**					**State St Eastbound**					**State St Westbound**					
Start Time	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Left	Thru	Rgt	Uturn	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	0	211	31	0	242	1	271	0	0	272	0	0	0	0	0	4	0	0	0	4	518
4:45 PM	0	213	20	0	233	0	286	0	0	286	0	0	0	0	0	7	0	0	0	7	526
5:00 PM	0	214	33	0	247	0	273	0	0	273	0	0	0	0	0	1	0	0	0	1	521
5:15 PM	0	224	35	0	259	0	247	0	0	247	0	0	0	0	0	1	0	0	0	1	507
Total Volume	0	862	119	0	981	1	1077	0	0	1078	0	0	0	0	0	13	0	0	0	13	2072
% App. Total	0.0	87.9	12.1	0.0	100	0.1	99.9	0.0	0.0	100	0.0	0.0	0.0	0.0	0	100.0	0.0	0.0	0.0	100	
PHF					0.947					0.942										0.464	0.985
Cars, PU, Vans	0	828	117	0	945	1	1041	0	0	1042	0	0	0	0	0	13	0	0	0	13	2000
% Cars, PU, Vans	0.0	96.1	98.3	0.0	96.3	100.0	96.7	0.0	0.0	96.7	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	96.5
Heavy trucks	0	34	2	0	36	0	36	0	0	36	0	0	0	0	0	0	0	0	0	0	72
%Heavy trucks	0.0	3.9	1.7	0.0	3.7	0.0	3.3	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5

File Name: 23-070185-006
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				State St Westbound				SR-65 Northbound				State St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	599
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1180
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1693
7:00 AM	0	255	0	0	1	0	0	0	0	259	84	0	0	0	0	0	2115
7:15 AM	0	261	0	0	0	0	0	0	0	243	77	0	0	0	0	0	1970
7:30 AM	0	240	0	0	1	0	0	0	0	204	68	0	0	0	0	0	1815
7:45 AM	0	198	0	0	0	0	0	0	0	179	45	0	0	0	0	0	1675
8:00 AM	0	208	0	0	1	0	0	0	0	205	40	0	0	0	0	0	1591
8:15 AM	2	237	0	0	1	0	1	0	0	153	32	0	0	0	0	0	1137
8:30 AM	0	219	0	0	0	0	0	0	0	142	12	0	0	0	0	0	711
8:45 AM	0	165	0	0	4	0	0	0	0	154	15	0	0	0	0	0	338
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	458
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	965
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1483
4:00 PM	0	224	0	0	2	0	0	0	0	199	33	0	0	0	0	0	2009
4:15 PM	0	282	0	0	0	0	2	0	0	196	27	0	0	0	0	0	2072
4:30 PM	1	271	0	0	4	0	0	0	0	211	31	0	0	0	0	0	2072
4:45 PM	0	286	0	0	7	0	0	0	0	213	20	0	0	0	0	0	2021
5:00 PM	0	273	0	0	1	0	0	0	0	214	33	0	0	0	0	0	1960
5:15 PM	0	247	0	0	1	0	0	0	0	224	35	0	0	0	0	0	1439
5:30 PM	0	200	0	0	0	0	0	0	0	226	41	0	0	0	0	0	932
5:45 PM	0	189	0	0	1	0	0	0	0	240	35	0	0	0	0	0	465
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-006
Date : 9/12/2023

All Vehicles & Uturns

	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	255	0	0	255	1	0	0	0	1	0	259	84	0	343	0	0	0	0	0	599	0
7:15	0	261	0	0	261	0	0	0	0	0	0	243	77	0	320	0	0	0	0	0	581	0
7:30	0	240	0	0	240	1	0	0	0	1	0	204	68	0	272	0	0	0	0	0	513	0
7:45	0	198	0	0	198	0	0	0	0	0	0	179	45	0	224	0	0	0	0	0	422	0
Total	0	954	0	0	954	2	0	0	0	2	0	885	274	0	1159	0	0	0	0	0	2115	0
8:00	0	208	0	0	208	1	0	0	0	1	0	205	40	0	245	0	0	0	0	0	454	0
8:15	2	237	0	0	239	1	0	1	0	2	0	153	32	0	185	0	0	0	0	0	426	0
8:30	0	219	0	0	219	0	0	0	0	0	0	142	12	0	154	0	0	0	0	0	373	0
8:45	0	165	0	0	165	4	0	0	0	4	0	154	15	0	169	0	0	0	0	0	338	0
Total	2	829	0	0	831	6	0	1	0	7	0	654	99	0	753	0	0	0	0	0	1591	0
16:00	0	224	0	0	224	2	0	0	0	2	0	199	33	0	232	0	0	0	0	0	458	0
16:15	0	282	0	0	282	0	0	2	0	2	0	196	27	0	223	0	0	0	0	0	507	0
16:30	1	271	0	0	272	4	0	0	0	4	0	211	31	0	242	0	0	0	0	0	518	0
16:45	0	286	0	0	286	7	0	0	0	7	0	213	20	0	233	0	0	0	0	0	526	0
Total	1	1063	0	0	1064	13	0	2	0	15	0	819	111	0	930	0	0	0	0	0	2009	0
17:00	0	273	0	0	273	1	0	0	0	1	0	214	33	0	247	0	0	0	0	0	521	0
17:15	0	247	0	0	247	1	0	0	0	1	0	224	35	0	259	0	0	0	0	0	507	0
17:30	0	200	0	0	200	0	0	0	0	0	0	226	41	0	267	0	0	0	0	0	467	0
17:45	0	189	0	0	189	1	0	0	0	1	0	240	35	0	275	0	0	0	0	0	465	0
Total	0	909	0	0	909	3	0	0	0	3	0	904	144	0	1048	0	0	0	0	0	1960	0
Grand Total	3	3755	0	0	3758	24	0	3	0	27	0	3262	628	0	3890	0	0	0	0	0	7675	0
Apprch %	0.1%	99.9%	0.0%	0.0%		88.9%	0.0%	11.1%	0.0%		0.0%	83.9%	16.1%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	48.9%	0.0%	0.0%	49.0%	0.3%	0.0%	0.0%	0.0%	0.4%	0.0%	42.5%	8.2%	0.0%	50.7%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	255	0	0	255	1	0	0	0	1	0	259	84	0	343	0	0	0	0	0	599
7:15	0	261	0	0	261	0	0	0	0	0	0	243	77	0	320	0	0	0	0	0	581
7:30	0	240	0	0	240	1	0	0	0	1	0	204	68	0	272	0	0	0	0	0	513
7:45	0	198	0	0	198	0	0	0	0	0	0	179	45	0	224	0	0	0	0	0	422
Total Volume	0	954	0	0	954	2	0	0	0	2	0	885	274	0	1159	0	0	0	0	0	2115
% App Total	0.0%	100.0%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	76.4%	23.6%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.914	.000	.000	.914	.500	.000	.000	.000	.500	.000	.854	.815	.000	.845	.000	.000	.000	.000	.000	.883

PM PEAK HOUR	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	1	271	0	0	272	4	0	0	0	4	0	211	31	0	242	0	0	0	0	0	518
16:45	0	286	0	0	286	7	0	0	0	7	0	213	20	0	233	0	0	0	0	0	526
17:00	0	273	0	0	273	1	0	0	0	1	0	214	33	0	247	0	0	0	0	0	521
17:15	0	247	0	0	247	1	0	0	0	1	0	224	35	0	259	0	0	0	0	0	507
Total Volume	1	1077	0	0	1078	13	0	0	0	13	0	862	119	0	981	0	0	0	0	0	2072
% App Total	0.1%	99.9%	0.0%	0.0%		100.0%	0.0%	0.0%	0.0%		0.0%	87.9%	12.1%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.250	.941	.000	.000	.942	.464	.000	.000	.000	.464	.000	.962	.850	.000	.947	.000	.000	.000	.000	.000	.985

File Name: 23-070185-006
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				State St Westbound				SR-65 Northbound				State St Eastbound				
Start Time	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	LEFT	THRU	RIGHT	PEDS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-006
Date : 9/12/2023

All Bikes and Peds

	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Peds Total
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%				
Total %	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	

AM PEAK HOUR	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

PM PEAK HOUR	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App Total	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			0.0%	0.0%	0.0%			
PHF	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000	.000	.000		.000	.000

File Name: 23-070185-006
Start Date: 9/12/2023
Start Time: 7:00 AM
Site Code:
Comment 1: City of Wheatland
Comment 2:
Comment 3:
Comment 4:

	SR-65 Southbound				State St Westbound				SR-65 Northbound				State St Eastbound				
Start Time	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	LEFT	THRU	RIGHT	UTURNS	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	118
7:00 AM	0	35	0	0	0	0	0	0	0	14	0	0	0	0	0	0	148
7:15 AM	0	13	0	0	0	0	0	0	0	17	0	0	0	0	0	0	136
7:30 AM	0	18	0	0	0	0	0	0	0	21	0	0	0	0	0	0	146
7:45 AM	0	15	0	0	0	0	0	0	0	15	0	0	0	0	0	0	143
8:00 AM	0	16	0	0	0	0	0	0	0	21	0	0	0	0	0	0	142
8:15 AM	0	17	0	0	0	0	0	0	0	23	0	0	0	0	0	0	105
8:30 AM	0	18	0	0	0	0	0	0	0	18	0	0	0	0	0	0	65
8:45 AM	0	15	0	0	0	0	0	0	0	14	0	0	0	0	0	0	29
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62
4:00 PM	0	3	0	0	0	0	0	0	0	9	1	0	0	0	0	0	80
4:15 PM	0	13	0	0	0	0	0	0	0	11	0	0	0	0	0	0	80
4:30 PM	0	12	0	0	0	0	0	0	0	13	0	0	0	0	0	0	72
4:45 PM	0	8	0	0	0	0	0	0	0	10	0	0	0	0	0	0	54
5:00 PM	0	8	0	0	0	0	0	0	0	5	0	0	0	0	0	0	45
5:15 PM	0	8	0	0	0	0	0	0	0	6	2	0	0	0	0	0	32
5:30 PM	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	16
5:45 PM	0	4	0	0	0	0	0	0	0	5	0	0	0	0	0	0	9
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Wheatland

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

File Name : 23-070185-006
Date : 9/12/2023

All HT & Uturns

	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	35	0	0	35	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	49	0
7:15	0	13	0	0	13	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	30	0
7:30	0	18	0	0	18	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	39	0
7:45	0	15	0	0	15	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	30	0
Total	0	81	0	0	81	0	0	0	0	0	0	67	0	0	67	0	0	0	0	0	148	0
8:00	0	16	0	0	16	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	37	0
8:15	0	17	0	0	17	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	40	0
8:30	0	18	0	0	18	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	36	0
8:45	0	15	0	0	15	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	29	0
Total	0	66	0	0	66	0	0	0	0	0	0	76	0	0	76	0	0	0	0	0	142	0
16:00	0	3	0	0	3	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	13	0
16:15	0	13	0	0	13	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	24	0
16:30	0	12	0	0	12	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	25	0
16:45	0	8	0	0	8	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	18	0
Total	0	36	0	0	36	0	0	0	0	0	0	43	1	0	44	0	0	0	0	0	80	0
17:00	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13	0
17:15	0	8	0	0	8	0	0	0	0	0	0	6	2	0	8	0	0	0	0	0	16	0
17:30	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7	0
17:45	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9	0
Total	0	23	0	0	23	0	0	0	0	0	0	20	2	0	22	0	0	0	0	0	45	0
Grand Total	0	206	0	0	206	0	0	0	0	0	0	206	3	0	209	0	0	0	0	0	415	0
Apprch %	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	98.6%	1.4%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	49.6%	0.0%	0.0%	49.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.6%	0.7%	0.0%	50.4%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
7:00	0	35	0	0	35	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	49
7:15	0	13	0	0	13	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	30
7:30	0	18	0	0	18	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	39
7:45	0	15	0	0	15	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	30
Total Volume	0	81	0	0	81	0	0	0	0	0	0	67	0	0	67	0	0	0	0	0	148
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.579	.000	.000	.579	.000	.000	.000	.000	.000	.000	.798	.000	.000	.798	.000	.000	.000	.000	.000	.755

PM PEAK HOUR	SR-65 Southbound					State St Westbound					SR-65 Northbound					State St Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	12	0	0	12	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	25
16:45	0	8	0	0	8	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	18
17:00	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	13
17:15	0	8	0	0	8	0	0	0	0	0	0	6	2	0	8	0	0	0	0	0	16
Total Volume	0	36	0	0	36	0	0	0	0	0	0	34	2	0	36	0	0	0	0	0	72
% App Total	0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	94.4%	5.6%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.000	.654	.250	.000	.692	.000	.000	.000	.000	.000	.720

Appendix C: Segment Average Daily Traffic

Prepared by National Data & Surveying Services

VOLUME

#1 - SR-65 N/O Levee Rd

Day: Tuesday
Date: 09/12/2023

City: Wheatland
Project #: CA23_070186_001

DAILY TOTALS

NB	SB	EB	WB	Total
12,982	13,527	0	0	26,509

15-Minutes Interval

TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00	44	26			70	12:00	175	162			337
0:15	31	16			47	12:15	146	170			316
0:30	21	21			42	12:30	157	147			304
0:45	20	13			33	12:45	147	154			301
1:00	21	20			41	13:00	180	161			341
1:15	27	16			43	13:15	173	179			352
1:30	28	27			55	13:30	162	170			332
1:45	22	21			43	13:45	176	193			369
2:00	24	17			41	14:00	163	194			357
2:15	23	30			53	14:15	186	235			421
2:30	23	28			51	14:30	204	227			431
2:45	12	28			40	14:45	278	215			493
3:00	20	25			45	15:00	229	239			468
3:15	21	32			53	15:15	225	252			477
3:30	13	59			72	15:30	246	234			480
3:45	19	45			64	15:45	236	228			464
4:00	29	77			106	16:00	250	223			473
4:15	32	80			112	16:15	227	287			514
4:30	55	147			202	16:30	240	265			505
4:45	57	128			185	16:45	240	287			527
5:00	72	153			225	17:00	226	286			512
5:15	91	242			333	17:15	276	246			522
5:30	108	300			408	17:30	269	214			483
5:45	124	261			385	17:45	236	189			425
6:00	161	248			409	18:00	200	199			399
6:15	198	249			447	18:15	187	160			347
6:30	212	262			474	18:30	164	136			300
6:45	265	247			512	18:45	158	95			253
7:00	344	263			607	19:00	127	98			225
7:15	337	259			596	19:15	120	138			258
7:30	252	250			502	19:30	131	91			222
7:45	224	199			423	19:45	110	85			195
8:00	226	215			441	20:00	122	69			191
8:15	186	237			423	20:15	106	87			193
8:30	168	211			379	20:30	95	107			202
8:45	155	178			333	20:45	99	62			161
9:00	152	174			326	21:00	93	59			152
9:15	173	175			348	21:15	83	54			137
9:30	146	147			293	21:30	65	54			119
9:45	148	166			314	21:45	75	45			120
10:00	126	171			297	22:00	75	44			119
10:15	142	176			318	22:15	67	45			112
10:30	158	172			330	22:30	58	36			94
10:45	180	139			319	22:45	59	33			92
11:00	139	154			293	23:00	37	26			63
11:15	155	144			299	23:15	49	32			81
11:30	181	155			336	23:30	44	19			63
11:45	186	179			365	23:45	60	14			74
TOTALS	5551	6582	0	0	12133	TOTALS	7431	6945	0	0	14376
SPLIT %	46%	54%	0%	0%	46%	SPLIT %	52%	48%	0%	0%	54%

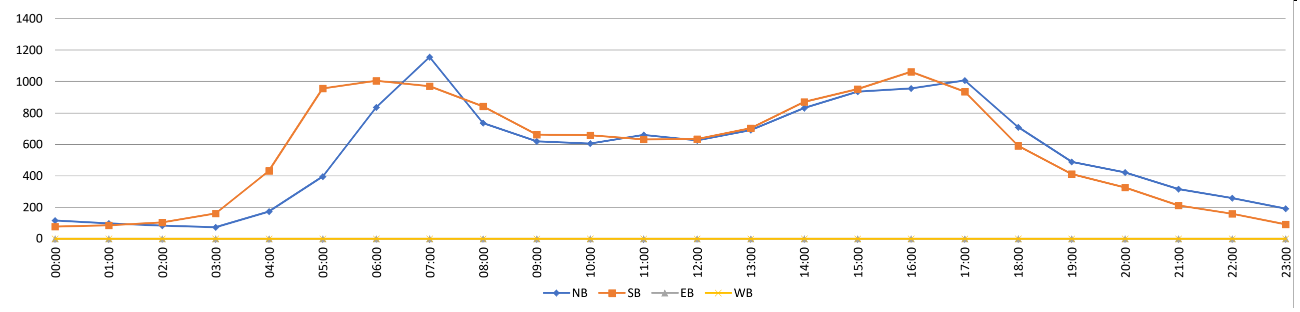
DAILY TOTALS

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00	116	76			192
01:00	02:00	98	84			182
02:00	03:00	82	103			185
03:00	04:00	73	161			234
04:00	05:00	173	432			605
05:00	06:00	395	956			1351
06:00	07:00	836	1006			1842
07:00	08:00	1157	971			2128
08:00	09:00	735	841			1576
09:00	10:00	619	662			1281
10:00	11:00	606	658			1264
11:00	12:00	661	632			1293
12:00	13:00	625	633			1258
13:00	14:00	691	703			1394
14:00	15:00	831	871			1702
15:00	16:00	936	953			1889
16:00	17:00	957	1062			2019
17:00	18:00	1007	935			1942
18:00	19:00	709	590			1299
19:00	20:00	488	412			900
20:00	21:00	422	325			747
21:00	22:00	316	212			528
22:00	23:00	259	158			417
23:00	00:00	190	91			281

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume	5551	6582			12133
Peak Hour	6:45	5:30			6:45
Peak Volume	1198	1058			2217
Peak Hour Factor	0.871	0.882			0.913
Peak Period	12:00	to	00:00		
Volume	7431	6945			14376
Peak Hour	16:45	16:15			16:30
Peak Volume	1011	1125			2066
Peak Hour Factor	0.916	0.980			0.980
Peak Period	07:00	to	09:00		
Volume	1892	1812			3704
Peak Hour	7:00	7:00			7:00
Peak Volume	1157	971			2128
Peak Hour Factor	0.841	0.923			0.876
Peak Period	16:00	to	18:00		
Volume	1964	1997			3961
Peak Hour	16:45	16:15			16:30
Peak Volume	1011	1125			2066
Peak Hour Factor	0.916	0.980			0.980



Prepared by National Data & Surveying Services

VOLUME

#2 - SR-65 S/O State St

Day: Tuesday
Date: 09/12/2023

City: Wheatland
Project #: CA23_070186_002

DAILY TOTALS	NB	SB	EB	WB	Total	DAILY TOTALS
	12,920	13,245	0	0	26,165	

15-Minutes Interval

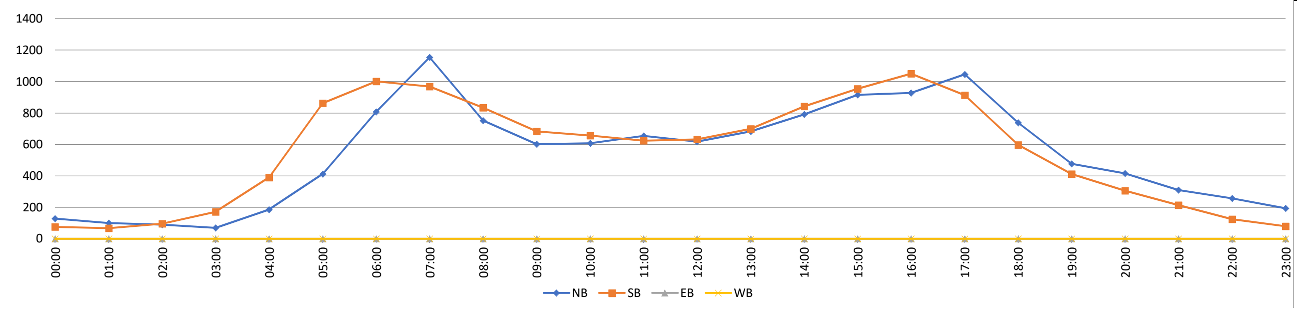
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00	54	22			76	12:00	155	169			324
0:15	32	20			52	12:15	155	161			316
0:30	21	17			38	12:30	159	145			304
0:45	20	16			36	12:45	148	157			305
1:00	21	13			34	13:00	179	167			346
1:15	27	13			40	13:15	165	176			341
1:30	28	21			49	13:30	155	173			328
1:45	24	20			44	13:45	184	184			368
2:00	25	17			42	14:00	163	193			356
2:15	21	27			48	14:15	186	237			423
2:30	32	28			60	14:30	207	215			422
2:45	10	24			34	14:45	235	197			432
3:00	15	28			43	15:00	207	244			451
3:15	24	33			57	15:15	223	250			473
3:30	11	57			68	15:30	239	227			466
3:45	18	52			70	15:45	246	234			480
4:00	29	61			90	16:00	231	226			457
4:15	37	77			114	16:15	226	276			502
4:30	56	129			185	16:30	239	262			501
4:45	63	122			185	16:45	232	286			518
5:00	70	141			211	17:00	251	278			529
5:15	88	205			293	17:15	257	248			505
5:30	124	267			391	17:30	264	201			465
5:45	129	250			379	17:45	273	186			459
6:00	151	229			380	18:00	205	191			396
6:15	184	257			441	18:15	196	168			364
6:30	220	264			484	18:30	169	136			305
6:45	253	251			504	18:45	167	101			268
7:00	340	260			600	19:00	128	106			234
7:15	317	264			581	19:15	123	131			254
7:30	274	241			515	19:30	123	92			215
7:45	222	203			425	19:45	102	83			185
8:00	243	212			455	20:00	122	73			195
8:15	186	232			418	20:15	103	79			182
8:30	154	215			369	20:30	92	84			176
8:45	169	174			343	20:45	98	69			167
9:00	144	185			329	21:00	80	56			136
9:15	162	179			341	21:15	84	61			145
9:30	162	154			316	21:30	68	50			118
9:45	133	165			298	21:45	77	46			123
10:00	138	174			312	22:00	73	39			112
10:15	132	178			310	22:15	67	35			102
10:30	152	165			317	22:30	54	26			80
10:45	185	139			324	22:45	62	24			86
11:00	130	144			274	23:00	36	26			62
11:15	158	148			306	23:15	49	24			73
11:30	172	160			332	23:30	43	14			57
11:45	194	172			366	23:45	66	14			80
TOTALS	5554	6425	0	0	11979	TOTALS	7366	6820	0	0	14186
SPLIT %	46%	54%	0%	0%	46%	SPLIT %	52%	48%	0%	0%	54%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00	127	75			202
01:00	02:00	100	67			167
02:00	03:00	88	96			184
03:00	04:00	68	170			238
04:00	05:00	185	389			574
05:00	06:00	411	863			1274
06:00	07:00	808	1001			1809
07:00	08:00	1153	968			2121
08:00	09:00	752	833			1585
09:00	10:00	601	683			1284
10:00	11:00	607	656			1263
11:00	12:00	654	624			1278
12:00	13:00	617	632			1249
13:00	14:00	683	700			1383
14:00	15:00	791	842			1633
15:00	16:00	915	955			1870
16:00	17:00	928	1050			1978
17:00	18:00	1045	913			1958
18:00	19:00	737	596			1333
19:00	20:00	476	412			888
20:00	21:00	415	305			720
21:00	22:00	309	213			522
22:00	23:00	256	124			380
23:00	00:00	194	78			272

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume	5554	6425			11979
Peak Hour	6:45	6:30			6:45
Peak Volume	1184	1039			2200
Peak Hour Factor	0.871	0.984			0.917
Peak Period	12:00	to	00:00		
Volume	7366	6820			14186
Peak Hour	17:00	16:15			16:30
Peak Volume	1045	1102			2053
Peak Hour Factor	0.957	0.963			0.970
Peak Period	07:00	to	09:00		
Volume	1905	1801			3706
Peak Hour	7:00	7:00			7:00
Peak Volume	1153	968			2121
Peak Hour Factor	0.848	0.917			0.884
Peak Period	16:00	to	18:00		
Volume	1973	1963			3936
Peak Hour	17:00	16:15			16:30
Peak Volume	1045	1102			2053
Peak Hour Factor	0.957	0.963			0.970



Prepared by National Data & Surveying Services

VOLUME

#3 - SR-65 S/O Main St

Day: Tuesday
Date: 09/12/2023

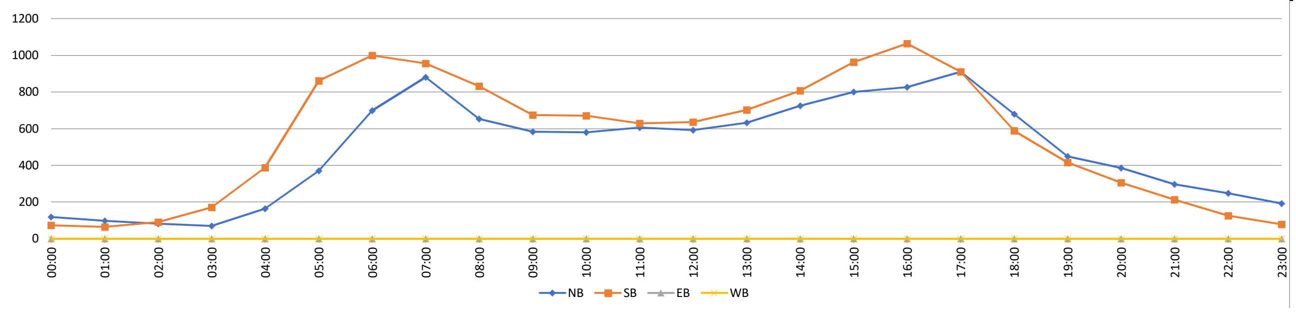
City: Wheatland
Project #: CA23_070186_003

DAILY TOTALS	NB	SB	EB	WB	Total	DAILY TOTALS
	11,637	13,220	0	0	24,857	

15-Minutes Interval											
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00	49	22			71	12:00	152	170			322
0:15	29	18			47	12:15	144	165			309
0:30	22	18			40	12:30	154	148			302
0:45	19	15			34	12:45	143	153			296
1:00	20	12			32	13:00	169	171			340
1:15	27	14			41	13:15	140	177			317
1:30	26	18			44	13:30	142	171			313
1:45	25	20			45	13:45	181	184			365
2:00	24	19			43	14:00	157	196			353
2:15	19	24			43	14:15	159	231			390
2:30	29	26			55	14:30	197	187			384
2:45	9	22			31	14:45	212	193			405
3:00	17	28			45	15:00	185	242			427
3:15	24	33			57	15:15	210	253			463
3:30	12	58			70	15:30	202	233			435
3:45	16	51			67	15:45	204	235			439
4:00	24	62			86	16:00	208	230			438
4:15	35	79			114	16:15	193	273			466
4:30	42	127			169	16:30	217	276			493
4:45	62	120			182	16:45	208	285			493
5:00	67	144			211	17:00	221	280			501
5:15	79	202			281	17:15	217	239			456
5:30	110	276			386	17:30	224	207			431
5:45	114	240			354	17:45	249	185			434
6:00	133	228			361	18:00	176	191			367
6:15	163	262			425	18:15	191	165			356
6:30	195	260			455	18:30	162	132			294
6:45	207	249			456	18:45	151	101			252
7:00	260	258			518	19:00	121	104			225
7:15	241	262			503	19:15	109	131			240
7:30	189	238			427	19:30	115	96			211
7:45	190	198			388	19:45	103	84			187
8:00	204	213			417	20:00	116	75			191
8:15	155	236			391	20:15	94	79			173
8:30	147	218			365	20:30	85	82			167
8:45	147	165			312	20:45	91	70			161
9:00	149	180			329	21:00	81	57			138
9:15	149	181			330	21:15	82	63			145
9:30	162	155			317	21:30	62	51			113
9:45	123	159			282	21:45	71	42			113
10:00	134	179			313	22:00	70	39			109
10:15	127	184			311	22:15	59	36			95
10:30	136	164			300	22:30	55	26			81
10:45	183	143			326	22:45	64	25			89
11:00	126	145			271	23:00	38	28			66
11:15	138	152			290	23:15	46	23			69
11:30	159	162			321	23:30	43	14			57
11:45	183	170			353	23:45	64	13			77
TOTALS	4900	6409	0	0	11309	TOTALS	6737	6811	0	0	13548
SPLIT %	43%	57%	0%	0%	45%	SPLIT %	50%	50%	0%	0%	55%

Hourly Intervals						
TIME		NB	SB	EB	WB	TOTAL
00:00	01:00	119	73			192
01:00	02:00	98	64			162
02:00	03:00	81	91			172
03:00	04:00	69	170			239
04:00	05:00	163	388			551
05:00	06:00	370	862			1232
06:00	07:00	698	999			1697
07:00	08:00	880	956			1836
08:00	09:00	653	832			1485
09:00	10:00	583	675			1258
10:00	11:00	580	670			1250
11:00	12:00	606	629			1235
12:00	13:00	593	636			1229
13:00	14:00	632	703			1335
14:00	15:00	725	807			1532
15:00	16:00	801	963			1764
16:00	17:00	826	1064			1890
17:00	18:00	911	911			1822
18:00	19:00	680	589			1269
19:00	20:00	448	415			863
20:00	21:00	386	306			692
21:00	22:00	296	213			509
22:00	23:00	248	126			374
23:00	00:00	191	78			269

STATISTICS					
	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume	4900	6409			11309
Peak Hour	6:30	6:15			6:30
Peak Volume	903	1029			1932
Peak Hour Factor	0.868	0.982			0.932
Peak Period	12:00	to	00:00		
Volume	6737	6811			13548
Peak Hour	17:00	16:15			16:15
Peak Volume	911	1114			1953
Peak Hour Factor	0.915	0.977			0.975
Peak Period	07:00	to	09:00		
Volume	1533	1788			3321
Peak Hour	7:00	7:00			7:00
Peak Volume	880	956			1836
Peak Hour Factor	0.846	0.912			0.886
Peak Period	16:00	to	18:00		
Volume	1737	1975			3712
Peak Hour	17:00	16:15			16:15
Peak Volume	911	1114			1953
Peak Hour Factor	0.915	0.977			0.975



Prepared by National Data & Surveying Services

VOLUME

#4 - SR-65 N/O 1st St

Day: Tuesday
Date: 09/12/2023

City: Wheatland
Project #: CA23_070186_004

	NB	SB	EB	WB	Total	
DAILY TOTALS	12,705	13,333	0	0	26,038	**DAILY TOTALS**

15-Minutes Interval

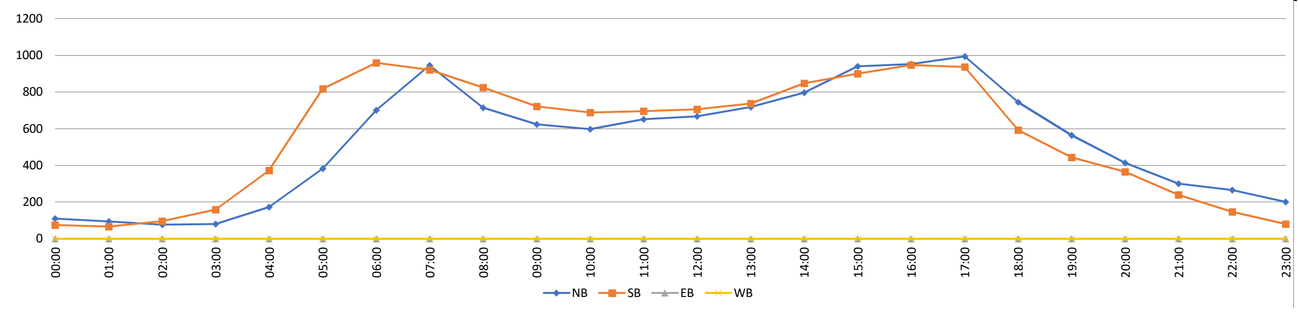
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00	43	22			**65**	**12:00**	170	178			**348**
0:15	25	19			**44**	**12:15**	172	186			**358**
0:30	21	16			**37**	**12:30**	150	167			**317**
0:45	20	17			**37**	**12:45**	175	174			**349**
1:00	19	15			**34**	**13:00**	179	162			**341**
1:15	26	14			**40**	**13:15**	175	192			**367**
1:30	25	18			**43**	**13:30**	170	175			**345**
1:45	23	18			**41**	**13:45**	194	208			**402**
2:00	26	22			**48**	**14:00**	184	217			**401**
2:15	21	29			**50**	**14:15**	171	235			**406**
2:30	22	24			**46**	**14:30**	201	195			**396**
2:45	8	20			**28**	**14:45**	240	200			**440**
3:00	20	27			**47**	**15:00**	233	214			**447**
3:15	26	33			**59**	**15:15**	229	240			**469**
3:30	13	56			**69**	**15:30**	255	221			**476**
3:45	21	43			**64**	**15:45**	224	225			**449**
4:00	27	57			**84**	**16:00**	233	234			**467**
4:15	36	78			**114**	**16:15**	230	233			**463**
4:30	43	123			**166**	**16:30**	249	249			**498**
4:45	66	114			**180**	**16:45**	241	232			**473**
5:00	64	139			**203**	**17:00**	239	259			**498**
5:15	83	193			**276**	**17:15**	247	255			**502**
5:30	118	253			**371**	**17:30**	246	225			**471**
5:45	117	232			**349**	**17:45**	263	197			**460**
6:00	132	221			**353**	**18:00**	194	185			**379**
6:15	156	254			**410**	**18:15**	213	168			**381**
6:30	196	249			**445**	**18:30**	177	127			**304**
6:45	216	236			**452**	**18:45**	160	112			**272**
7:00	241	246			**487**	**19:00**	150	99			**249**
7:15	245	241			**486**	**19:15**	142	137			**279**
7:30	240	222			**462**	**19:30**	143	105			**248**
7:45	219	212			**431**	**19:45**	130	103			**233**
8:00	232	205			**437**	**20:00**	132	103			**235**
8:15	160	246			**406**	**20:15**	98	81			**179**
8:30	168	197			**365**	**20:30**	91	92			**183**
8:45	155	177			**332**	**20:45**	93	89			**182**
9:00	144	199			**343**	**21:00**	84	67			**151**
9:15	177	171			**348**	**21:15**	80	70			**150**
9:30	166	164			**330**	**21:30**	66	53			**119**
9:45	136	188			**324**	**21:45**	71	49			**120**
10:00	134	175			**309**	**22:00**	72	45			**117**
10:15	141	200			**341**	**22:15**	70	39			**109**
10:30	128	157			**285**	**22:30**	56	31			**87**
10:45	195	156			**351**	**22:45**	67	31			**98**
11:00	137	162			**299**	**23:00**	48	32			**80**
11:15	144	162			**306**	**23:15**	47	22			**69**
11:30	178	192			**370**	**23:30**	38	10			**48**
11:45	193	180			**373**	**23:45**	67	16			**83**
TOTALS	**5146**	**6394**	**0**	**0**	**11540**	**TOTALS**	**7559**	**6939**	**0**	**0**	**14498**
SPLIT %	**45%**	**55%**	**0%**	**0%**	**44%**	**SPLIT %**	**52%**	**48%**	**0%**	**0%**	**56%**

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	**01:00**	109	74			**183**
01:00	**02:00**	93	65			**158**
02:00	**03:00**	77	95			**172**
03:00	**04:00**	80	159			**239**
04:00	**05:00**	172	372			**544**
05:00	**06:00**	382	817			**1199**
06:00	**07:00**	700	960			**1660**
07:00	**08:00**	945	921			**1866**
08:00	**09:00**	715	825			**1540**
09:00	**10:00**	623	722			**1345**
10:00	**11:00**	598	688			**1286**
11:00	**12:00**	652	696			**1348**
12:00	**13:00**	667	705			**1372**
13:00	**14:00**	718	737			**1455**
14:00	**15:00**	796	847			**1643**
15:00	**16:00**	941	900			**1841**
16:00	**17:00**	953	948			**1901**
17:00	**18:00**	995	936			**1931**
18:00	**19:00**	744	592			**1336**
19:00	**20:00**	565	444			**1009**
20:00	**21:00**	414	365			**779**
21:00	**22:00**	301	239			**540**
22:00	**23:00**	265	146			**411**
23:00	**00:00**	200	80			**280**

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	**00:00**	**to**	**12:00**		
Volume	5146	6394			11540
Peak Hour	7:00	6:15			6:45
Peak Volume	945	985			1887
Peak Hour Factor	0.964	0.969			0.969
Peak Period	**12:00**	**to**	**00:00**		
Volume	7559	6939			14498
Peak Hour	17:00	16:30			16:30
Peak Volume	995	995			1971
Peak Hour Factor	0.946	0.960			0.982
Peak Period	**07:00**	**to**	**09:00**		
Volume	1660	1746			3406
Peak Hour	7:00	7:00			7:00
Peak Volume	945	921			1866
Peak Hour Factor	0.964	0.936			0.958
Peak Period	**16:00**	**to**	**18:00**		
Volume	1948	1884			3832
Peak Hour	17:00	16:30			16:30
Peak Volume	995	995			1971
Peak Hour Factor	0.946	0.960			0.982



Prepared by National Data & Surveying Services

VOLUME

#5 - Main St Bet. Malone Ave & SR-65

Day: Tuesday
Date: 09/12/2023

City: Wheatland
Project #: CA23_070186_005

DAILY TOTALS	NB	SB	EB	WB	Total	DAILY TOTALS
	0	0	1,060	698	1,758	

15-Minutes Interval

TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00			2	0	2	12:00			13	18	31
0:15			0	0	0	12:15			20	18	38
0:30			0	0	0	12:30			16	18	34
0:45			0	0	0	12:45			22	11	33
1:00			0	0	0	13:00			19	13	32
1:15			1	0	1	13:15			18	11	29
1:30			0	0	0	13:30			23	10	33
1:45			0	0	0	13:45			22	10	32
2:00			1	0	1	14:00			28	14	42
2:15			0	0	0	14:15			32	16	48
2:30			0	0	0	14:30			16	19	35
2:45			0	0	0	14:45			31	10	41
3:00			0	0	0	15:00			35	10	45
3:15			0	0	0	15:15			27	20	47
3:30			0	0	0	15:30			24	17	41
3:45			2	0	2	15:45			28	12	40
4:00			1	2	3	16:00			27	16	43
4:15			0	1	1	16:15			28	18	46
4:30			0	0	0	16:30			19	13	32
4:45			0	0	0	16:45			29	17	46
5:00			3	1	4	17:00			11	18	29
5:15			2	2	4	17:15			23	28	51
5:30			7	2	9	17:30			19	27	46
5:45			7	1	8	17:45			31	20	51
6:00			0	1	1	18:00			17	16	33
6:15			0	0	0	18:15			13	7	20
6:30			13	3	16	18:30			23	9	32
6:45			4	4	8	18:45			12	12	24
7:00			7	3	10	19:00			42	5	47
7:15			5	4	9	19:15			40	3	43
7:30			24	13	37	19:30			21	4	25
7:45			26	7	33	19:45			6	10	16
8:00			33	4	37	20:00			38	5	43
8:15			9	5	14	20:15			9	2	11
8:30			13	3	16	20:30			1	3	4
8:45			3	1	4	20:45			0	1	1
9:00			3	5	8	21:00			1	3	4
9:15			7	5	12	21:15			1	1	2
9:30			7	5	12	21:30			0	0	0
9:45			3	18	21	21:45			0	0	0
10:00			4	21	25	22:00			0	1	1
10:15			8	21	29	22:15			0	0	0
10:30			8	13	21	22:30			1	0	1
10:45			10	24	34	22:45			1	1	2
11:00			15	18	33	23:00			0	1	1
11:15			9	12	21	23:15			0	1	1
11:30			18	15	33	23:30			0	1	1
11:45			17	13	30	23:45			1	1	2
TOTALS	0	0	272	227	499	TOTALS	0	0	788	471	1259
SPLIT %	0%	0%	55%	45%	28%	SPLIT %	0%	0%	63%	37%	72%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			2	0	2
01:00	02:00			1	0	1
02:00	03:00			1	0	1
03:00	04:00			2	0	2
04:00	05:00			1	3	4
05:00	06:00			19	6	25
06:00	07:00			17	8	25
07:00	08:00			62	27	89
08:00	09:00			58	13	71
09:00	10:00			20	33	53
10:00	11:00			30	79	109
11:00	12:00			59	58	117
12:00	13:00			71	65	136
13:00	14:00			82	44	126
14:00	15:00			107	59	166
15:00	16:00			114	59	173
16:00	17:00			103	64	167
17:00	18:00			84	93	177
18:00	19:00			65	44	109
19:00	20:00			109	22	131
20:00	21:00			48	11	59
21:00	22:00			2	4	6
22:00	23:00			2	2	4
23:00	00:00			1	4	5

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			272	227	499
Peak Hour			7:30	10:00	7:30
Peak Volume			92	79	121
Peak Hour Factor			0.697	0.823	0.818
Peak Period	12:00	to	00:00		
Volume			788	471	1259
Peak Hour			14:45	17:00	17:15
Peak Volume			117	93	181
Peak Hour Factor			0.836	0.830	0.887
Peak Period	07:00	to	09:00		
Volume			120	40	160
Peak Hour			7:30	7:30	7:30
Peak Volume			92	29	121
Peak Hour Factor			0.697	0.558	0.818
Peak Period	16:00	to	18:00		
Volume			187	157	344
Peak Hour			16:00	17:00	17:00
Peak Volume			103	93	177
Peak Hour Factor			0.888	0.830	0.868

Prepared by National Data & Surveying Services

VOLUME

#6 - Main St Bet. SR-65 & State St

Day: Tuesday
Date: 09/12/2023

City: Wheatland
Project #: CA23_070186_006

DAILY TOTALS	NB	SB	EB	WB	Total	DAILY TOTALS
	0	0	1,283	2,572	3,855	

15-Minutes Interval

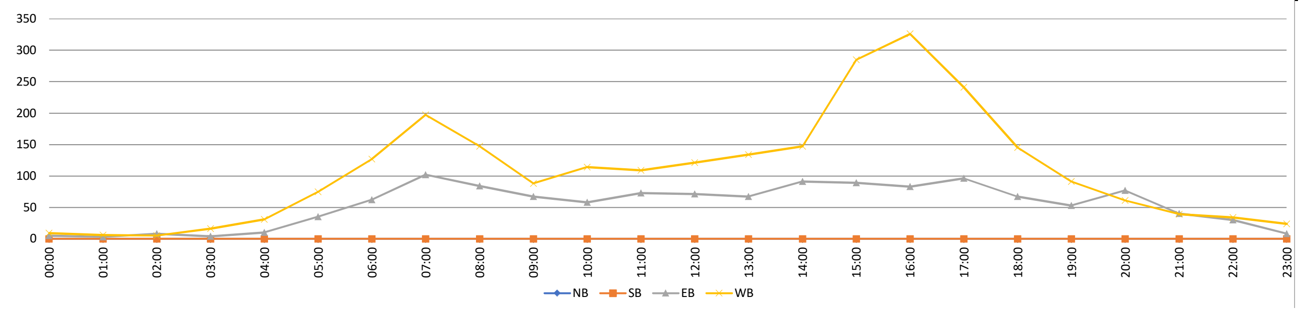
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00			3	3	6	12:00			17	38	55
0:15			1	1	2	12:15			14	30	44
0:30			0	3	3	12:30			19	23	42
0:45			1	2	3	12:45			21	30	51
1:00			1	1	2	13:00			17	41	58
1:15			0	0	0	13:15			11	33	44
1:30			1	1	2	13:30			21	31	52
1:45			1	4	5	13:45			18	29	47
2:00			3	0	3	14:00			19	38	57
2:15			0	1	1	14:15			36	35	71
2:30			2	0	2	14:30			16	44	60
2:45			3	4	7	14:45			20	30	50
3:00			0	1	1	15:00			23	82	105
3:15			0	6	6	15:15			20	69	89
3:30			3	2	5	15:30			19	63	82
3:45			1	7	8	15:45			27	71	98
4:00			0	8	8	16:00			28	69	97
4:15			3	7	10	16:15			16	95	111
4:30			5	7	12	16:30			20	77	97
4:45			2	9	11	16:45			19	85	104
5:00			6	13	19	17:00			22	84	106
5:15			6	21	27	17:15			26	55	81
5:30			14	21	35	17:30			22	63	85
5:45			9	20	29	17:45			26	39	65
6:00			11	17	28	18:00			22	52	74
6:15			14	27	41	18:15			18	39	57
6:30			21	31	52	18:30			14	32	46
6:45			16	52	68	18:45			13	22	35
7:00			30	40	70	19:00			8	20	28
7:15			14	46	60	19:15			15	19	34
7:30			30	66	96	19:30			17	28	45
7:45			28	45	73	19:45			13	24	37
8:00			38	41	79	20:00			37	15	52
8:15			12	39	51	20:15			18	21	39
8:30			21	35	56	20:30			10	15	25
8:45			13	32	45	20:45			12	10	22
9:00			23	17	40	21:00			15	12	27
9:15			12	29	41	21:15			9	6	15
9:30			20	20	40	21:30			7	9	16
9:45			12	22	34	21:45			9	12	21
10:00			11	35	46	22:00			8	7	15
10:15			13	33	46	22:15			5	9	14
10:30			19	24	43	22:30			10	6	16
10:45			15	22	37	22:45			7	12	19
11:00			13	33	46	23:00			2	6	8
11:15			18	21	39	23:15			3	5	8
11:30			22	32	54	23:30			2	6	8
11:45			20	23	43	23:45			1	7	8
TOTALS	**0**	**0**	**511**	**924**	**1435**	**TOTALS**	**0**	**0**	**772**	**1648**	**2420**
SPLIT %	**0%**	**0%**	**36%**	**64%**	**37%**	**SPLIT %**	**0%**	**0%**	**32%**	**68%**	**63%**

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			5	9	14
01:00	02:00			3	6	9
02:00	03:00			8	5	13
03:00	04:00			4	16	20
04:00	05:00			10	31	41
05:00	06:00			35	75	110
06:00	07:00			62	127	189
07:00	08:00			102	197	299
08:00	09:00			84	147	231
09:00	10:00			67	88	155
10:00	11:00			58	114	172
11:00	12:00			73	109	182
12:00	13:00			71	121	192
13:00	14:00			67	134	201
14:00	15:00			91	147	238
15:00	16:00			89	285	374
16:00	17:00			83	326	409
17:00	18:00			96	241	337
18:00	19:00			67	145	212
19:00	20:00			53	91	144
20:00	21:00			77	61	138
21:00	22:00			40	39	79
22:00	23:00			30	34	64
23:00	00:00			8	24	32

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			511	924	1435
Peak Hour			7:15	6:45	7:15
Peak Volume			110	204	308
Peak Hour Factor			0.724	0.773	0.802
Peak Period	12:00	to	00:00		
Volume			772	1648	2420
Peak Hour			17:00	16:15	16:15
Peak Volume			96	341	418
Peak Hour Factor			0.923	0.897	0.941
Peak Period	07:00	to	09:00		
Volume			186	344	530
Peak Hour			7:15	7:15	7:15
Peak Volume			110	198	308
Peak Hour Factor			0.724	0.750	0.802
Peak Period	16:00	to	18:00		
Volume			179	567	746
Peak Hour			17:00	16:15	16:15
Peak Volume			96	341	418
Peak Hour Factor			0.923	0.897	0.941



Appendix D: 2023 Existing Conditions Capacity Analysis Worksheets

HCM Signalized Intersection Capacity Analysis
1: SR 65 & First Street

Timing Plan: 23EX - AM
10/06/2023

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	136	6	64	2	9	5	103	829	0	3	799	23
Future Volume (vph)	136	6	64	2	9	5	103	829	0	3	799	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1690			1681		1770	1743		1805	1752	
Flt Permitted		0.79			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1381			1658		1770	1743		1805	1752	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	139	6	65	2	9	5	105	846	0	3	815	23
RTOR Reduction (vph)	0	12	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	198	0	0	12	0	105	846	0	3	837	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.3			30.7		22.4	72.8		1.1	68.4	
Effective Green, g (s)		21.3			30.7		22.4	72.8		1.1	68.4	
Actuated g/C Ratio		0.15			0.22		0.16	0.52		0.01	0.49	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		210			363		283	906		14	855	
v/s Ratio Prot							0.06	c0.49		c0.00	c0.48	
v/s Ratio Perm		c0.14			c0.01							
v/c Ratio		0.94			0.03		0.37	0.93		0.21	0.98	
Uniform Delay, d1		58.8			43.0		52.5	31.4		69.0	35.1	
Progression Factor		1.00			1.00		0.85	0.68		1.00	1.00	
Incremental Delay, d2		46.0			0.0		0.2	12.8		2.8	26.1	
Delay (s)		104.8			43.0		44.6	34.1		71.8	61.2	
Level of Service		F			D		D	C		E	E	
Approach Delay (s)		104.8			43.0			35.3			61.2	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	53.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	12	5	3	25	53	927	4	21	883	0
Future Vol, veh/h	0	2	12	5	3	25	53	927	4	21	883	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	966	4	22	920	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2059	2046	921	2051	2044	970	921	0	0	971	0	0
Stage 1	965	965	-	1079	1079	-	-	-	-	-	-	-
Stage 2	1094	1081	-	972	965	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	41	57	331	42	57	310	750	-	-	718	-	-
Stage 1	309	336	-	267	297	-	-	-	-	-	-	-
Stage 2	262	296	-	306	336	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	33	51	331	36	51	309	749	-	-	717	-	-
Mov Cap-2 Maneuver	33	51	-	36	51	-	-	-	-	-	-	-
Stage 1	286	325	-	247	275	-	-	-	-	-	-	-
Stage 2	220	274	-	284	325	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26	47.6	0.5	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	749	-	-	186	118	717	-	-
HCM Lane V/C Ratio	0.074	-	-	0.078	0.291	0.031	-	-
HCM Control Delay (s)	10.2	-	-	26	47.6	10.2	-	-
HCM Lane LOS	B	-	-	D	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	1.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	13	0	0	14	37	970	4	15	881	2
Future Vol, veh/h	1	0	13	0	0	14	37	970	4	15	881	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	1032	4	16	937	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2091	2086	939	2090	2085	1035	940	0	0	1037	0	0
Stage 1	971	971	-	1113	1113	-	-	-	-	-	-	-
Stage 2	1120	1115	-	977	972	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	39	54	323	37	51	275	737	-	-	678	-	-
Stage 1	307	334	-	247	278	-	-	-	-	-	-	-
Stage 2	253	286	-	295	324	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	50	323	33	47	275	736	-	-	677	-	-
Mov Cap-2 Maneuver	35	50	-	33	47	-	-	-	-	-	-	-
Stage 1	290	326	-	234	263	-	-	-	-	-	-	-
Stage 2	227	271	-	276	316	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.1	18.8	0.4	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	736	-	-	203	275	677	-	-
HCM Lane V/C Ratio	0.053	-	-	0.073	0.054	0.024	-	-
HCM Control Delay (s)	10.2	-	-	24.1	18.8	10.4	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.2	0.1	-	-

4: SR 65 & 4th Street

10/06/2023

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	1	2	0	121	10	889	3	57	840	1
Future Vol, veh/h	0	0	1	2	0	121	10	889	3	57	840	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	0	0	1	2	0	130	11	956	3	61	903	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2072	2009	905	2007	2008	959	905	0	0	960	0	0
Stage 1	1027	1027	-	981	981	-	-	-	-	-	-	-
Stage 2	1045	982	-	1026	1027	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	40	60	338	44	60	313	760	-	-	705	-	-
Stage 1	285	314	-	301	329	-	-	-	-	-	-	-
Stage 2	279	330	-	284	313	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	54	338	40	54	313	759	-	-	704	-	-
Mov Cap-2 Maneuver	22	54	-	40	54	-	-	-	-	-	-	-
Stage 1	281	286	-	296	324	-	-	-	-	-	-	-
Stage 2	161	325	-	259	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	28.6	0.1	0.7
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	759	-	-	338	282	704	-	-
HCM Lane V/C Ratio	0.014	-	-	0.003	0.469	0.087	-	-
HCM Control Delay (s)	9.8	-	-	15.7	28.6	10.6	-	-
HCM Lane LOS	A	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.4	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	3	35	23	111	23	64	2	835	45	20	821	3
Future Volume (vph)	3	35	23	111	23	64	2	835	45	20	821	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1666			1714		1805	1746		1570	1726	
Flt Permitted		0.99			0.79		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1651			1392		1805	1746		1570	1726	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	3	38	25	119	25	69	2	898	48	22	883	3
RTOR Reduction (vph)	0	16	0	0	12	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	50	0	0	201	0	2	945	0	22	886	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		25.7			20.4		1.3	83.1		12.9	71.9	
Effective Green, g (s)		25.7			20.4		1.3	83.1		12.9	71.9	
Actuated g/C Ratio		0.18			0.15		0.01	0.59		0.09	0.51	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		303			202		16	1036		144	886	
v/s Ratio Prot							c0.00	c0.54		0.01	c0.51	
v/s Ratio Perm		c0.03			c0.14							
v/c Ratio		0.17			1.00		0.12	0.91		0.15	1.00	
Uniform Delay, d1		48.1			59.8		68.8	25.2		58.5	34.0	
Progression Factor		1.00			1.00		1.00	1.00		0.68	0.32	
Incremental Delay, d2		0.1			61.5		3.5	13.4		0.3	23.5	
Delay (s)		48.2			121.3		72.3	38.6		40.2	34.3	
Level of Service		D			F		E	D		D	C	
Approach Delay (s)		48.2			121.3			38.7			34.5	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

6: SR 65 & State Street

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	2	0	885	274	0	954
Future Vol, veh/h	2	0	885	274	0	954
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	1006	311	0	1084

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2246	1162	0	0	1317	0
Stage 1	1162	-	-	-	-	-
Stage 2	1084	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	45	233	-	-	532	-
Stage 1	292	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	45	233	-	-	532	-
Mov Cap-2 Maneuver	45	-	-	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	319	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	89.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	45	532	-
HCM Lane V/C Ratio	-	-	0.051	-	-
HCM Control Delay (s)	-	-	89.2	0	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

1: SR 65 & First Street

10/06/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	43	4	65	3	1	16	36	939	1	8	931	11
Future Volume (vph)	43	4	65	3	1	16	36	939	1	8	931	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1657			1553		1752	1827		1805	1824	
Flt Permitted		0.86			0.95		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1460			1493		1752	1827		1805	1824	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	4	66	3	1	16	37	958	1	8	950	11
RTOR Reduction (vph)	0	38	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	76	0	0	6	0	37	959	0	8	961	0
Confl. Peds. (#/hr)	5					5			2	2		
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	3%	4%	4%	0%	4%	4%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.3			18.5		19.7	76.0		1.3	74.4	
Effective Green, g (s)		12.3			18.5		19.7	76.0		1.3	74.4	
Actuated g/C Ratio		0.09			0.13		0.14	0.54		0.01	0.53	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		128			197		246	991		16	969	
v/s Ratio Prot							0.02	c0.53		c0.00	c0.53	
v/s Ratio Perm		c0.05			c0.00							
v/c Ratio		0.59			0.03		0.15	0.97		0.50	0.99	
Uniform Delay, d1		61.4			52.9		52.8	30.8		69.0	32.5	
Progression Factor		1.00			1.00		0.91	0.82		1.00	1.00	
Incremental Delay, d2		7.1			0.0		0.1	17.2		8.7	26.9	
Delay (s)		68.6			53.0		48.2	42.4		77.7	59.4	
Level of Service		E			D		D	D		E	E	
Approach Delay (s)		68.6			53.0			42.6			59.5	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	20	30	960	7	23	974	0
Future Vol, veh/h	1	0	5	2	0	20	30	960	7	23	974	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	4	4	4	3	4	4	0	4	4
Mvmt Flow	1	0	5	2	0	21	31	990	7	24	1004	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2118	2111	1004	2111	2108	994	1004	0	0	997	0	0
Stage 1	1052	1052	-	1056	1056	-	-	-	-	-	-	-
Stage 2	1066	1059	-	1055	1052	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.14	6.54	6.24	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.536	4.036	3.336	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	37	52	296	37	51	295	686	-	-	702	-	-
Stage 1	276	306	-	270	300	-	-	-	-	-	-	-
Stage 2	271	304	-	270	301	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	32	48	296	34	47	295	686	-	-	702	-	-
Mov Cap-2 Maneuver	32	48	-	34	47	-	-	-	-	-	-	-
Stage 1	264	296	-	258	287	-	-	-	-	-	-	-
Stage 2	241	290	-	256	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.3	28.8	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	686	-	-	125	174	702	-	-
HCM Lane V/C Ratio	0.045	-	-	0.049	0.13	0.034	-	-
HCM Control Delay (s)	10.5	-	-	35.3	28.8	10.3	-	-
HCM Lane LOS	B	-	-	E	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	22	12	975	2	21	955	4
Future Vol, veh/h	0	0	8	1	0	22	12	975	2	21	955	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	9	9	9	0	4	4	10	4	4
Mvmt Flow	0	0	8	1	0	23	12	1005	2	22	985	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2073	2062	987	2065	2063	1006	989	0	0	1007	0	0
Stage 1	1031	1031	-	1030	1030	-	-	-	-	-	-	-
Stage 2	1042	1031	-	1035	1033	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.19	6.59	6.29	4.1	-	-	4.2	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.581	4.081	3.381	2.2	-	-	2.29	-	-
Pot Cap-1 Maneuver	40	55	303	38	52	284	707	-	-	658	-	-
Stage 1	284	313	-	273	302	-	-	-	-	-	-	-
Stage 2	280	313	-	272	301	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	35	52	303	36	49	284	707	-	-	658	-	-
Mov Cap-2 Maneuver	35	52	-	36	49	-	-	-	-	-	-	-
Stage 1	279	303	-	268	297	-	-	-	-	-	-	-
Stage 2	253	308	-	256	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	23.4	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	707	-	-	303	219	658	-	-
HCM Lane V/C Ratio	0.017	-	-	0.027	0.108	0.033	-	-
HCM Control Delay (s)	10.2	-	-	17.2	23.4	10.7	-	-
HCM Lane LOS	B	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	0	4	0	87	8	900	1	64	894	6
Future Vol, veh/h	1	0	0	4	0	87	8	900	1	64	894	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	4	4	2	4	4
Mvmt Flow	1	0	0	4	0	90	8	928	1	66	922	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2047	2002	925	2002	2005	929	928	0	0	929	0	0
Stage 1	1057	1057	-	945	945	-	-	-	-	-	-	-
Stage 2	990	945	-	1057	1060	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	42	60	329	45	60	327	745	-	-	736	-	-
Stage 1	275	304	-	317	343	-	-	-	-	-	-	-
Stage 2	299	343	-	275	303	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	54	329	42	54	327	745	-	-	736	-	-
Mov Cap-2 Maneuver	28	54	-	42	54	-	-	-	-	-	-	-
Stage 1	272	277	-	314	339	-	-	-	-	-	-	-
Stage 2	215	339	-	250	276	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	138.4	27.5	0.1	0.7
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	745	-	-	28	252	736	-	-
HCM Lane V/C Ratio	0.011	-	-	0.037	0.372	0.09	-	-
HCM Control Delay (s)	9.9	-	-	138.4	27.5	10.4	-	-
HCM Lane LOS	A	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.6	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	36	27	24	283	11	52	23	808	4	46	805	32
Future Volume (vph)	36	27	24	283	11	52	23	808	4	46	805	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1776			1736		1805	1808		1656	1816	
Flt Permitted		0.93			0.70		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1687			1273		1805	1808		1656	1816	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	37	28	24	289	11	53	23	824	4	47	821	33
RTOR Reduction (vph)	0	9	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	80	0	0	349	0	23	828	0	47	853	0
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	5%	5%	9%	4%	4%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		28.2			20.4		5.0	77.0		16.5	71.3	
Effective Green, g (s)		28.2			20.4		5.0	77.0		16.5	71.3	
Actuated g/C Ratio		0.20			0.15		0.04	0.55		0.12	0.51	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		339			185		64	994		195	924	
v/s Ratio Prot							c0.01	c0.46		0.03	c0.47	
v/s Ratio Perm		c0.05			c0.27							
v/c Ratio		0.24			1.89		0.36	0.83		0.24	0.92	
Uniform Delay, d1		46.9			59.8		65.9	26.2		56.1	31.8	
Progression Factor		1.00			1.00		1.00	1.00		0.64	0.40	
Incremental Delay, d2		0.1			418.0		3.4	8.1		0.3	8.4	
Delay (s)		47.0			477.8		69.4	34.3		35.9	21.0	
Level of Service		D			F		E	C		D	C	
Approach Delay (s)		47.0			477.8			35.3			21.8	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	101.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

6: SR 65 & State Street

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	13	0	862	119	1	1077
Future Vol, veh/h	13	0	862	119	1	1077
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	13	0	880	121	1	1099

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2042	941	0	0	1001	0
Stage 1	941	-	-	-	-	-
Stage 2	1101	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	63	322	-	-	688	-
Stage 1	383	-	-	-	-	-
Stage 2	321	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	63	322	-	-	688	-
Mov Cap-2 Maneuver	63	-	-	-	-	-
Stage 1	383	-	-	-	-	-
Stage 2	320	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	76.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	63	688	-
HCM Lane V/C Ratio	-	-	0.211	0.001	-
HCM Control Delay (s)	-	-	76.8	10.2	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Appendix E: 2023 Existing Conditions plus Project Capacity Analysis Worksheets

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	136	6	75	2	9	5	135	974	0	3	858	23
Future Volume (vph)	136	6	75	2	9	5	135	974	0	3	858	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1681		1770	1743		1805	1753	
Flt Permitted		0.80			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1389			1654		1770	1743		1805	1753	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	139	6	77	2	9	5	138	994	0	3	876	23
RTOR Reduction (vph)	0	14	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	208	0	0	12	0	138	994	0	3	899	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.4			25.7		25.6	77.9		1.1	70.4	
Effective Green, g (s)		21.4			25.7		25.6	77.9		1.1	70.4	
Actuated g/C Ratio		0.15			0.18		0.18	0.56		0.01	0.50	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		212			303		323	969		14	881	
v/s Ratio Prot							0.08	c0.57		c0.00	c0.51	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		0.98			0.04		0.43	1.03		0.21	1.02	
Uniform Delay, d1		59.1			47.0		50.7	31.0		69.0	34.8	
Progression Factor		1.00			1.00		0.84	0.67		1.00	1.00	
Incremental Delay, d2		56.6			0.0		0.1	25.2		2.8	35.4	
Delay (s)		115.8			47.0		42.7	46.0		71.8	70.2	
Level of Service		F			D		D	D		E	E	
Approach Delay (s)		115.8			47.0			45.6			70.2	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	62.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	12	5	3	25	53	1104	4	21	953	0
Future Vol, veh/h	0	2	12	5	3	25	53	1104	4	21	953	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	1150	4	22	993	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2316	2303	994	2308	2301	1154	994	0	0	1155	0	0
Stage 1	1038	1038	-	1263	1263	-	-	-	-	-	-	-
Stage 2	1278	1265	-	1045	1038	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	300	27	39	242	704	-	-	612	-	-
Stage 1	281	311	-	210	243	-	-	-	-	-	-	-
Stage 2	206	243	-	279	311	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	35	300	23	35	242	703	-	-	611	-	-
Mov Cap-2 Maneuver	21	35	-	23	35	-	-	-	-	-	-	-
Stage 1	259	299	-	193	224	-	-	-	-	-	-	-
Stage 2	167	224	-	256	299	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	32.8			78.9			0.5			0.2		
HCM LOS	D			F								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	703	-	-	144	81	611	-	-
HCM Lane V/C Ratio	0.079	-	-	0.101	0.424	0.036	-	-
HCM Control Delay (s)	10.6	-	-	32.8	78.9	11.1	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	1.7	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	13	0	0	14	37	1147	4	15	951	2
Future Vol, veh/h	1	0	13	0	0	14	37	1147	4	15	951	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	1220	4	16	1012	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2354	2349	1014	2353	2348	1223	1015	0	0	1225	0	0
Stage 1	1046	1046	-	1301	1301	-	-	-	-	-	-	-
Stage 2	1308	1303	-	1052	1047	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	292	24	35	213	691	-	-	576	-	-
Stage 1	278	308	-	193	226	-	-	-	-	-	-	-
Stage 2	198	233	-	268	299	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	33	292	21	32	213	690	-	-	575	-	-
Mov Cap-2 Maneuver	22	33	-	21	32	-	-	-	-	-	-	-
Stage 1	262	299	-	182	213	-	-	-	-	-	-	-
Stage 2	174	219	-	248	290	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.5	23.2	0.3	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	690	-	-	156	213	575	-	-
HCM Lane V/C Ratio	0.057	-	-	0.095	0.07	0.028	-	-
HCM Control Delay (s)	10.5	-	-	30.5	23.2	11.4	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.2	0.1	-	-

4: SR 65 & 4th Street

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	1	2	0	121	10	1066	3	57	910	1
Future Vol, veh/h	0	0	1	2	0	121	10	1066	3	57	910	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	0	0	1	2	0	130	11	1146	3	61	978	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2337	2274	980	2272	2273	1149	980	0	0	1150	0	0
Stage 1	1102	1102	-	1171	1171	-	-	-	-	-	-	-
Stage 2	1235	1172	-	1101	1102	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	26	41	306	29	41	243	712	-	-	597	-	-
Stage 1	259	290	-	236	268	-	-	-	-	-	-	-
Stage 2	218	269	-	258	289	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	11	36	306	26	36	243	711	-	-	596	-	-
Mov Cap-2 Maneuver	11	36	-	26	36	-	-	-	-	-	-	-
Stage 1	255	260	-	232	264	-	-	-	-	-	-	-
Stage 2	100	265	-	231	259	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	45.7	0.1	0.7
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	711	-	-	306	214	596	-	-
HCM Lane V/C Ratio	0.015	-	-	0.004	0.618	0.103	-	-
HCM Control Delay (s)	10.1	-	-	16.8	45.7	11.7	-	-
HCM Lane LOS	B	-	-	C	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	3.6	0.3	-	-

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	3	35	28	122	23	64	18	1012	61	20	891	3
Future Volume (vph)	3	35	28	122	23	64	18	1012	61	20	891	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.96		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1655			1717		1805	1744		1570	1726	
Flt Permitted		0.99			0.79		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1642			1396		1805	1744		1570	1726	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	3	38	30	131	25	69	19	1088	66	22	958	3
RTOR Reduction (vph)	0	19	0	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	52	0	0	214	0	19	1152	0	22	961	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		24.4			20.4		4.7	86.3		11.0	75.1	
Effective Green, g (s)		24.4			20.4		4.7	86.3		11.0	75.1	
Actuated g/C Ratio		0.17			0.15		0.03	0.62		0.08	0.54	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		286			203		60	1075		123	925	
v/s Ratio Prot							c0.01	c0.66		0.01	c0.56	
v/s Ratio Perm		c0.03			c0.15							
v/c Ratio		0.18			1.05		0.32	1.07		0.18	1.04	
Uniform Delay, d1		49.3			59.8		66.1	26.9		60.3	32.5	
Progression Factor		1.00			1.00		1.00	1.00		0.68	0.36	
Incremental Delay, d2		0.1			78.0		3.0	48.9		0.4	32.0	
Delay (s)		49.4			137.8		69.1	75.8		41.2	43.6	
Level of Service		D			F		E	E		D	D	
Approach Delay (s)		49.4			137.8			75.7			43.5	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	67.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	2	0	1094	274	0	1040
Future Vol, veh/h	2	0	1094	274	0	1040
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	1243	311	0	1182

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2581	1399	0	0	1554	0
Stage 1	1399	-	-	-	-	-
Stage 2	1182	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	27	169	-	-	432	-
Stage 1	224	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	27	169	-	-	432	-
Mov Cap-2 Maneuver	27	-	-	-	-	-
Stage 1	224	-	-	-	-	-
Stage 2	286	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	150.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	27	432	-
HCM Lane V/C Ratio	-	-	0.084	-	-
HCM Control Delay (s)	-	-	150.2	0	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	51.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Vol, veh/h	105	56	11	1159	954	43
Future Vol, veh/h	105	56	11	1159	954	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	300
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	61	12	1260	1037	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2321	1037	1084	0	-	0
Stage 1	1037	-	-	-	-	-
Stage 2	1284	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 41	281	643	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 38	281	643	-	-	-
Mov Cap-2 Maneuver	~ 38	-	-	-	-	-
Stage 1	321	-	-	-	-	-
Stage 2	260	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 741.8	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	643	-	38	281	-	-
HCM Lane V/C Ratio	0.019	-	3.003	0.217	-	-
HCM Control Delay (s)	10.7	0	$ 1126	21.3	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	12.8	0.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Vol, veh/h	105	56	11	1159	1010	43
Future Vol, veh/h	105	56	11	1159	1010	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	300
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	61	12	1260	1098	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2382	1098	1145	0	-	0
Stage 1	1098	-	-	-	-	-
Stage 2	1284	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 38	259	610	-	-	-
Stage 1	319	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 37	259	610	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	313	-	-	-	-	-
Stage 2	260	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	39.7	0.1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	610	-	191	259	-	-
HCM Lane V/C Ratio	0.02	-	0.598	0.235	-	-
HCM Control Delay (s)	11	-	48.5	23.1	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.1	-	3.3	0.9	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	43	4	103	3	1	16	58	995	1	8	1027	11
Future Volume (vph)	43	4	103	3	1	16	58	995	1	8	1027	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.96		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1628			1523		1770	1743		1805	1757	
Flt Permitted		0.90			0.93		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1479			1421		1770	1743		1805	1757	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	4	105	3	1	16	59	1015	1	8	1048	11
RTOR Reduction (vph)	0	59	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	94	0	0	6	0	59	1016	0	8	1059	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		13.8			17.8		19.9	78.2		1.3	76.4	
Effective Green, g (s)		13.8			17.8		19.9	78.2		1.3	76.4	
Actuated g/C Ratio		0.10			0.13		0.14	0.56		0.01	0.55	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		145			180		251	973		16	958	
v/s Ratio Prot							0.03	c0.58		c0.00	c0.60	
v/s Ratio Perm		c0.06			c0.00							
v/c Ratio		0.64			0.03		0.24	1.04		0.50	1.10	
Uniform Delay, d1		60.7			53.6		53.3	30.9		69.0	31.8	
Progression Factor		1.00			1.00		0.85	0.74		1.00	1.00	
Incremental Delay, d2		9.4			0.0		0.1	31.8		8.7	62.2	
Delay (s)		70.2			53.6		45.5	54.7		77.7	94.0	
Level of Service		E			D		D	D		E	F	
Approach Delay (s)		70.2			53.6			54.2			93.9	
Approach LOS		E			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	73.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	20	30	1038	7	23	1108	0
Future Vol, veh/h	1	0	5	2	0	20	30	1038	7	23	1108	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	1	0	5	2	0	21	31	1081	7	24	1154	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2361	2354	1155	2353	2351	1087	1155	0	0	1089	0	0
Stage 1	1203	1203	-	1148	1148	-	-	-	-	-	-	-
Stage 2	1158	1151	-	1205	1203	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	242	25	36	265	612	-	-	648	-	-
Stage 1	227	260	-	244	276	-	-	-	-	-	-	-
Stage 2	241	275	-	227	260	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	33	242	23	33	264	611	-	-	647	-	-
Mov Cap-2 Maneuver	21	33	-	23	33	-	-	-	-	-	-	-
Stage 1	215	250	-	231	262	-	-	-	-	-	-	-
Stage 2	211	261	-	214	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49	37	0.3	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	611	-	-	88	135	647	-	-
HCM Lane V/C Ratio	0.051	-	-	0.071	0.17	0.037	-	-
HCM Control Delay (s)	11.2	-	-	49	37	10.8	-	-
HCM Lane LOS	B	-	-	E	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	22	12	1053	2	21	1089	4
Future Vol, veh/h	0	0	8	1	0	22	12	1053	2	21	1089	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	0	0	9	1	0	23	13	1120	2	22	1159	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2365	2355	1162	2358	2356	1122	1164	0	0	1123	0	0
Stage 1	1206	1206	-	1148	1148	-	-	-	-	-	-	-
Stage 2	1159	1149	-	1210	1208	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	240	24	34	245	607	-	-	629	-	-
Stage 1	226	259	-	236	268	-	-	-	-	-	-	-
Stage 2	241	275	-	218	250	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	34	240	22	32	245	606	-	-	628	-	-
Mov Cap-2 Maneuver	22	34	-	22	32	-	-	-	-	-	-	-
Stage 1	221	250	-	231	262	-	-	-	-	-	-	-
Stage 2	213	269	-	203	241	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.6	29.7	0.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	606	-	-	240	170	628	-	-
HCM Lane V/C Ratio	0.021	-	-	0.035	0.144	0.036	-	-
HCM Control Delay (s)	11.1	-	-	20.6	29.7	10.9	-	-
HCM Lane LOS	B	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	0	4	0	87	8	978	1	64	1028	6
Future Vol, veh/h	1	0	0	4	0	87	8	978	1	64	1028	6
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	1	0	0	4	0	94	9	1052	1	69	1105	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2365	2319	1109	2318	2322	1054	1112	0	0	1054	0	0
Stage 1	1247	1247	-	1072	1072	-	-	-	-	-	-	-
Stage 2	1118	1072	-	1246	1250	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	25	38	257	27	38	276	635	-	-	649	-	-
Stage 1	215	247	-	268	298	-	-	-	-	-	-	-
Stage 2	254	299	-	214	246	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	15	33	257	25	33	276	634	-	-	648	-	-
Mov Cap-2 Maneuver	15	33	-	25	33	-	-	-	-	-	-	-
Stage 1	212	221	-	264	294	-	-	-	-	-	-	-
Stage 2	166	295	-	191	220	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	262.8	42.1	0.1	0.7
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	634	-	-	15	191	648	-	-
HCM Lane V/C Ratio	0.014	-	-	0.072	0.512	0.106	-	-
HCM Control Delay (s)	10.8	-	-	262.8	42.1	11.2	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	2.6	0.4	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	36	27	62	340	11	52	45	886	38	46	939	32
Future Volume (vph)	36	27	62	340	11	52	45	886	38	46	939	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.98		1.00	0.99		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1618			1748		1805	1748		1570	1719	
Flt Permitted		0.96			0.62		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1569			1138		1805	1748		1570	1719	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	39	29	67	366	12	56	48	953	41	49	1010	34
RTOR Reduction (vph)	0	26	0	0	3	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	109	0	0	431	0	48	993	0	49	1043	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		24.4			20.4		8.0	82.5		14.8	75.9	
Effective Green, g (s)		24.4			20.4		8.0	82.5		14.8	75.9	
Actuated g/C Ratio		0.17			0.15		0.06	0.59		0.11	0.54	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		273			165		103	1030		165	931	
v/s Ratio Prot							c0.03	c0.57		0.03	c0.61	
v/s Ratio Perm		c0.07			c0.38							
v/c Ratio		0.40			2.61		0.47	0.96		0.30	1.12	
Uniform Delay, d1		51.3			59.8		63.9	27.3		57.8	32.0	
Progression Factor		1.00			1.00		1.00	1.00		0.67	0.45	
Incremental Delay, d2		0.4			741.6		3.3	20.6		0.3	59.8	
Delay (s)		51.7			801.4		67.2	47.9		39.3	74.3	
Level of Service		D			F		E	D		D	E	
Approach Delay (s)		51.7			801.4			48.8			72.7	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	179.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	13	0	996	119	1	1306
Future Vol, veh/h	13	0	996	119	1	1306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	15	0	1132	135	1	1484

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2686	1200	0	0	1267	0
Stage 1	1200	-	-	-	-	-
Stage 2	1486	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	23	221	-	-	555	-
Stage 1	280	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	23	221	-	-	555	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	280	-	-	-	-	-
Stage 2	201	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 308.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	23	555	-
HCM Lane V/C Ratio	-	-	0.642	0.002	-
HCM Control Delay (s)	-	-	$ 308.5	11.5	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	1.9	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	38.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Vol, veh/h	67	45	76	981	1077	115
Future Vol, veh/h	67	45	76	981	1077	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	300
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	49	83	1066	1171	125

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2403	1171	1296	0	-	0
Stage 1	1171	-	-	-	-	-
Stage 2	1232	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 37	235	535	-	-	-
Stage 1	295	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 23	235	535	-	-	-
Mov Cap-2 Maneuver	~ 23	-	-	-	-	-
Stage 1	183	-	-	-	-	-
Stage 2	275	-	-	-	-	-

Approach	EB		NB		SB
HCM Control Delay, s	$ 804		0.9		0
HCM LOS	F				

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	535	-	23	235	-	-
HCM Lane V/C Ratio	0.154	-	3.166	0.208	-	-
HCM Control Delay (s)	13	0	$ 1327.6	24.3	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.5	-	9.2	0.8	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Vol, veh/h	67	45	76	981	1122	115
Future Vol, veh/h	67	45	76	981	1122	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	300
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	49	83	1066	1220	125

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2452	1220	1345	0	-	0
Stage 1	1220	-	-	-	-	-
Stage 2	1232	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 34	220	512	-	-	-
Stage 1	279	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 28	220	512	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	234	-	-	-	-	-
Stage 2	275	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	35.5	1	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	512	-	168	220	-	-
HCM Lane V/C Ratio	0.161	-	0.433	0.222	-	-
HCM Control Delay (s)	13.4	-	41.9	26	-	-
HCM Lane LOS	B	-	E	D	-	-
HCM 95th %tile Q(veh)	0.6	-	2	0.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Appendix F: 2023 Existing Conditions plus Project with Mitigations Capacity Analysis Worksheets

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	136	6	75	2	9	5	135	974	0	3	858	23
Future Volume (vph)	136	6	75	2	9	5	135	974	0	3	858	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1681		1770	1743		1805	1753	
Flt Permitted		0.80			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1389			1656		1770	1743		1805	1753	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	139	6	77	2	9	5	138	994	0	3	876	23
RTOR Reduction (vph)	0	14	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	208	0	0	12	0	138	994	0	3	898	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		23.2			27.9		17.9	84.9		1.0	75.7	
Effective Green, g (s)		23.2			27.9		17.9	84.9		1.0	75.7	
Actuated g/C Ratio		0.17			0.20		0.13	0.61		0.01	0.54	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		230			330		226	1057		12	947	
v/s Ratio Prot							0.08	c0.57		c0.00	c0.51	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		0.90			0.04		0.61	0.94		0.25	0.95	
Uniform Delay, d1		57.3			45.2		57.8	25.2		69.1	30.3	
Progression Factor		1.00			1.00		0.79	0.43		1.00	1.00	
Incremental Delay, d2		34.4			0.0		2.2	11.8		4.0	19.1	
Delay (s)		91.7			45.2		47.6	22.5		73.1	49.4	
Level of Service		F			D		D	C		E	D	
Approach Delay (s)		91.7			45.2			25.6			49.5	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	12	5	3	25	53	1104	4	21	953	0
Future Vol, veh/h	0	2	12	5	3	25	53	1104	4	21	953	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	1150	4	22	993	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2316	2303	994	2308	2301	1154	994	0	0	1155	0	0
Stage 1	1038	1038	-	1263	1263	-	-	-	-	-	-	-
Stage 2	1278	1265	-	1045	1038	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	300	27	39	242	704	-	-	612	-	-
Stage 1	281	311	-	210	243	-	-	-	-	-	-	-
Stage 2	206	243	-	279	311	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	35	300	23	35	242	703	-	-	611	-	-
Mov Cap-2 Maneuver	21	35	-	23	35	-	-	-	-	-	-	-
Stage 1	259	299	-	193	224	-	-	-	-	-	-	-
Stage 2	167	224	-	256	299	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.8	78.9	0.5	0.2
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	703	-	-	144	81	611	-	-
HCM Lane V/C Ratio	0.079	-	-	0.101	0.424	0.036	-	-
HCM Control Delay (s)	10.6	-	-	32.8	78.9	11.1	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	1.7	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	13	0	0	14	37	1147	4	15	951	2
Future Vol, veh/h	1	0	13	0	0	14	37	1147	4	15	951	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	1220	4	16	1012	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2354	2349	1014	2353	2348	1223	1015	0	0	1225	0	0
Stage 1	1046	1046	-	1301	1301	-	-	-	-	-	-	-
Stage 2	1308	1303	-	1052	1047	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	292	24	35	213	691	-	-	576	-	-
Stage 1	278	308	-	193	226	-	-	-	-	-	-	-
Stage 2	198	233	-	268	299	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	33	292	21	32	213	690	-	-	575	-	-
Mov Cap-2 Maneuver	22	33	-	21	32	-	-	-	-	-	-	-
Stage 1	262	299	-	182	213	-	-	-	-	-	-	-
Stage 2	174	219	-	248	290	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.5	23.2	0.3	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	690	-	-	156	213	575	-	-
HCM Lane V/C Ratio	0.057	-	-	0.095	0.07	0.028	-	-
HCM Control Delay (s)	10.5	-	-	30.5	23.2	11.4	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.2	0.1	-	-

HCM Signalized Intersection Capacity Analysis | Timing Plan: 23 EX+PROJ w/ MIT AM
4: SR 65 & 4th Street | 10/26/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	0	0	1	2	0	121	10	1066	3	57	910	1
Future Volume (vph)	0	0	1	2	0	121	10	1066	3	57	910	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.86			0.87		1.00	1.00		1.00	1.00	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644			1630		1805	1758		1719	1727	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1644			1624		1805	1758		1719	1727	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	0	1	2	0	130	11	1146	3	61	978	1
RTOR Reduction (vph)	0	1	0	0	123	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	9	0	11	1149	0	61	979	0
Confl. Peds. (#/hr)							1		1	1		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	8%	8%	5%	10%	10%
Turn Type		NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		7.5			7.5		3.0	109.9		9.1	116.0	
Effective Green, g (s)		7.5			7.5		3.0	109.9		9.1	116.0	
Actuated g/C Ratio		0.05			0.05		0.02	0.79		0.06	0.83	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		88			87		38	1380		111	1430	
v/s Ratio Prot		0.00					0.01	c0.65		c0.04	c0.57	
v/s Ratio Perm					c0.01							
v/c Ratio		0.00			0.10		0.29	0.83		0.55	0.68	
Uniform Delay, d1		62.7			63.0		67.5	9.3		63.5	4.8	
Progression Factor		1.00			1.00		1.21	0.32		1.12	0.12	
Incremental Delay, d2		0.0			0.5		1.1	1.6		3.4	1.7	
Delay (s)		62.7			63.6		82.5	4.6		74.7	2.2	
Level of Service		E			E		F	A		E	A	
Approach Delay (s)		62.7			63.6			5.3			6.5	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

5: SR 65 & Main Street

10/26/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	3	35	28	122	23	64	18	1012	61	20	891	3
Future Volume (vph)	3	35	28	122	23	64	18	1012	61	20	891	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.96		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1655			1717		1805	1744		1570	1726	
Flt Permitted		0.99			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1642			1379		1805	1744		1570	1726	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	3	38	30	131	25	69	19	1088	66	22	958	3
RTOR Reduction (vph)	0	18	0	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	53	0	0	214	0	19	1152	0	22	961	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		27.5			20.6		3.0	92.1		3.1	88.4	
Effective Green, g (s)		27.5			20.6		3.0	92.1		3.1	88.4	
Actuated g/C Ratio		0.20			0.15		0.02	0.66		0.02	0.63	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		322			202		38	1147		34	1089	
v/s Ratio Prot							c0.01	c0.66		0.01	c0.56	
v/s Ratio Perm		c0.03			c0.16							
v/c Ratio		0.16			1.06		0.50	1.00		0.65	0.88	
Uniform Delay, d1		46.7			59.7		67.8	24.0		67.9	21.5	
Progression Factor		1.00			1.00		0.95	0.90		0.75	0.30	
Incremental Delay, d2		0.1			79.8		7.0	23.2		27.2	8.0	
Delay (s)		46.8			139.5		71.6	44.9		77.8	14.4	
Level of Service		D			F		E	D		E	B	
Approach Delay (s)		46.8			139.5			45.3			15.8	
Approach LOS		D			F			D			B	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↱			↰
Traffic Vol, veh/h	2	0	1094	274	0	1040
Future Vol, veh/h	2	0	1094	274	0	1040
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	1243	311	0	1182

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2581	1399	0	0	1554	0
Stage 1	1399	-	-	-	-	-
Stage 2	1182	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	27	169	-	-	432	-
Stage 1	224	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	27	169	-	-	432	-
Mov Cap-2 Maneuver	27	-	-	-	-	-
Stage 1	224	-	-	-	-	-
Stage 2	286	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	150.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	27	432	-
HCM Lane V/C Ratio	-	-	0.084	-	-
HCM Control Delay (s)	-	-	150.2	0	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

7: SR 65 & Red Oak Drive

	↗	↘	↖	↑	↓	↙
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Volume (vph)	105	56	11	1159	954	43
Future Volume (vph)	105	56	11	1159	954	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		1862	1863	1583
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1770	1583		1841	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	61	12	1260	1037	47
RTOR Reduction (vph)	0	55	0	0	0	8
Lane Group Flow (vph)	114	6	0	1272	1037	39
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	14.0	14.0		117.0	117.0	117.0
Effective Green, g (s)	14.0	14.0		117.0	117.0	117.0
Actuated g/C Ratio	0.10	0.10		0.84	0.84	0.84
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	177	158		1538	1556	1322
v/s Ratio Prot	c0.06				0.56	
v/s Ratio Perm		0.00		c0.69		0.02
v/c Ratio	0.64	0.04		0.83	0.67	0.03
Uniform Delay, d1	60.6	56.9		6.1	4.3	1.9
Progression Factor	1.00	1.00		0.58	0.44	0.54
Incremental Delay, d2	7.8	0.1		3.2	1.3	0.0
Delay (s)	68.4	57.0		6.8	3.2	1.1
Level of Service	E	E		A	A	A
Approach Delay (s)	64.4			6.8	3.1	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
8: SR 65 & Devalentine Parkway

Timing Plan: 23 EX+PROJ w/ MIT AM
10/26/2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Volume (vph)	105	56	11	1159	1010	43
Future Volume (vph)	105	56	11	1159	1010	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	61	12	1260	1098	47
RTOR Reduction (vph)	0	55	0	0	0	10
Lane Group Flow (vph)	114	6	12	1260	1098	37
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	14.0	14.0	2.3	117.0	110.2	110.2
Effective Green, g (s)	14.0	14.0	2.3	117.0	110.2	110.2
Actuated g/C Ratio	0.10	0.10	0.02	0.84	0.79	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	158	29	1556	1466	1246
v/s Ratio Prot	c0.06		0.01	c0.68	0.59	
v/s Ratio Perm		0.00				0.02
v/c Ratio	0.64	0.04	0.41	0.81	0.75	0.03
Uniform Delay, d1	60.6	56.9	68.2	5.8	7.7	3.2
Progression Factor	1.00	1.00	1.00	1.00	1.37	1.80
Incremental Delay, d2	7.8	0.1	9.3	4.7	2.8	0.0
Delay (s)	68.4	57.0	77.5	10.5	13.4	5.9
Level of Service	E	E	E	B	B	A
Approach Delay (s)	64.4			11.1	13.1	
Approach LOS	E			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: SR 65 & First Street

Timing Plan: 23 EX+PROJ w/ MIT PM
10/26/2023

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	43	4	103	3	1	16	58	995	1	8	1027	11
Future Volume (vph)	43	4	103	3	1	16	58	995	1	8	1027	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.96		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1628			1522		1770	1743		1805	1757	
Flt Permitted		0.90			0.91		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1479			1392		1770	1743		1805	1757	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	4	105	3	1	16	59	1015	1	8	1048	11
RTOR Reduction (vph)	0	58	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	95	0	0	6	0	59	1016	0	8	1059	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.8			15.8		8.9	95.0		1.0	94.8	
Effective Green, g (s)		12.8			15.8		8.9	95.0		1.0	94.8	
Actuated g/C Ratio		0.09			0.11		0.06	0.68		0.01	0.68	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		135			157		112	1182		12	1189	
v/s Ratio Prot							0.03	c0.58		c0.00	c0.60	
v/s Ratio Perm		c0.06			c0.00							
v/c Ratio		0.70			0.04		0.53	0.86		0.67	0.89	
Uniform Delay, d1		61.8			55.3		63.5	17.4		69.3	18.4	
Progression Factor		1.00			1.00		0.85	0.31		1.00	1.00	
Incremental Delay, d2		15.3			0.0		1.5	6.0		73.9	10.2	
Delay (s)		77.0			55.4		55.5	11.4		143.3	28.6	
Level of Service		E			E		E	B		F	C	
Approach Delay (s)		77.0			55.4			13.8			29.4	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	20	30	1038	7	23	1108	0
Future Vol, veh/h	1	0	5	2	0	20	30	1038	7	23	1108	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	1	0	5	2	0	21	31	1081	7	24	1154	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2361	2354	1155	2353	2351	1087	1155	0	0	1089	0	0
Stage 1	1203	1203	-	1148	1148	-	-	-	-	-	-	-
Stage 2	1158	1151	-	1205	1203	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	242	25	36	265	612	-	-	648	-	-
Stage 1	227	260	-	244	276	-	-	-	-	-	-	-
Stage 2	241	275	-	227	260	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	33	242	23	33	264	611	-	-	647	-	-
Mov Cap-2 Maneuver	21	33	-	23	33	-	-	-	-	-	-	-
Stage 1	215	250	-	231	262	-	-	-	-	-	-	-
Stage 2	211	261	-	214	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49	37	0.3	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	611	-	-	88	135	647	-	-
HCM Lane V/C Ratio	0.051	-	-	0.071	0.17	0.037	-	-
HCM Control Delay (s)	11.2	-	-	49	37	10.8	-	-
HCM Lane LOS	B	-	-	E	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	22	12	1053	2	21	1089	4
Future Vol, veh/h	0	0	8	1	0	22	12	1053	2	21	1089	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	0	0	9	1	0	23	13	1120	2	22	1159	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2365	2355	1162	2358	2356	1122	1164	0	0	1123	0	0
Stage 1	1206	1206	-	1148	1148	-	-	-	-	-	-	-
Stage 2	1159	1149	-	1210	1208	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	240	24	34	245	607	-	-	629	-	-
Stage 1	226	259	-	236	268	-	-	-	-	-	-	-
Stage 2	241	275	-	218	250	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	34	240	22	32	245	606	-	-	628	-	-
Mov Cap-2 Maneuver	22	34	-	22	32	-	-	-	-	-	-	-
Stage 1	221	250	-	231	262	-	-	-	-	-	-	-
Stage 2	213	269	-	203	241	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	20.6			29.7			0.1			0.2		
HCM LOS	C			D								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	606	-	-	240	170	628	-	-
HCM Lane V/C Ratio	0.021	-	-	0.035	0.144	0.036	-	-
HCM Control Delay (s)	11.1	-	-	20.6	29.7	10.9	-	-
HCM Lane LOS	B	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0.1	-	-

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	1	0	0	4	0	87	8	978	1	64	1028	6
Future Volume (vph)	1	0	0	4	0	87	8	978	1	64	1028	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.87		1.00	1.00		1.00	1.00	
Flt Protected		0.95			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805			1634		1805	1759		1719	1726	
Flt Permitted		0.55			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1041			1617		1805	1759		1719	1726	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1	0	0	4	0	94	9	1052	1	69	1105	6
RTOR Reduction (vph)	0	0	0	0	89	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	9	0	9	1053	0	69	1111	0
Confl. Peds. (#/hr)							1		1	1		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	8%	8%	5%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		7.3			7.3		1.5	109.5		9.7	117.7	
Effective Green, g (s)		7.3			7.3		1.5	109.5		9.7	117.7	
Actuated g/C Ratio		0.05			0.05		0.01	0.78		0.07	0.84	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		54			84		19	1375		119	1451	
v/s Ratio Prot							0.00	0.60		c0.04	c0.64	
v/s Ratio Perm		0.00			c0.01							
v/c Ratio		0.02			0.11		0.47	0.77		0.58	0.77	
Uniform Delay, d1		63.0			63.2		68.9	8.3		63.2	5.0	
Progression Factor		1.00			1.00		1.25	0.48		1.02	0.43	
Incremental Delay, d2		0.1			0.6		4.7	1.1		4.0	2.3	
Delay (s)		63.1			63.8		90.7	5.1		68.6	4.5	
Level of Service		E			E		F	A		E	A	
Approach Delay (s)		63.1			63.8			5.8			8.3	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
5: SR 65 & Main Street

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	36	27	62	340	11	52	45	886	38	46	939	32
Future Volume (vph)	36	27	62	340	11	52	45	886	38	46	939	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.98		1.00	0.99		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1618			1749		1805	1748		1570	1719	
Flt Permitted		0.91			0.65		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1501			1191		1805	1748		1570	1719	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	39	29	67	366	12	56	48	953	41	49	1010	34
RTOR Reduction (vph)	0	25	0	0	4	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	110	0	0	430	0	48	993	0	49	1043	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		38.4			35.4		4.0	78.4		5.9	78.4	
Effective Green, g (s)		38.4			35.4		4.0	78.4		5.9	78.4	
Actuated g/C Ratio		0.27			0.25		0.03	0.56		0.04	0.56	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		411			301		51	978		66	962	
v/s Ratio Prot							c0.03	c0.57		0.03	c0.61	
v/s Ratio Perm		c0.07			c0.36							
v/c Ratio		0.27			1.43		0.94	1.02		0.74	1.08	
Uniform Delay, d1		39.8			52.3		67.9	30.8		66.3	30.8	
Progression Factor		1.00			1.00		0.95	1.02		0.87	0.69	
Incremental Delay, d2		0.1			211.4		67.0	23.4		25.1	49.9	
Delay (s)		39.9			263.7		131.4	54.9		83.0	71.0	
Level of Service		D			F		F	D		F	E	
Approach Delay (s)		39.9			263.7			58.4			71.6	
Approach LOS		D			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	95.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	13	0	996	119	1	1306
Future Vol, veh/h	13	0	996	119	1	1306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	15	0	1132	135	1	1484

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2686	1200	0	0	1267	0
Stage 1	1200	-	-	-	-	-
Stage 2	1486	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	23	221	-	-	555	-
Stage 1	280	-	-	-	-	-
Stage 2	203	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	23	221	-	-	555	-
Mov Cap-2 Maneuver	23	-	-	-	-	-
Stage 1	280	-	-	-	-	-
Stage 2	201	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 308.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	23	555	-
HCM Lane V/C Ratio	-	-	0.642	0.002	-
HCM Control Delay (s)	-	-	$ 308.5	11.5	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	1.9	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Volume (vph)	67	45	76	981	1077	115
Future Volume (vph)	67	45	76	981	1077	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		1856	1863	1583
Flt Permitted	0.95	1.00		0.71	1.00	1.00
Satd. Flow (perm)	1770	1583		1324	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	49	83	1066	1171	125
RTOR Reduction (vph)	0	45	0	0	0	18
Lane Group Flow (vph)	73	4	0	1149	1171	107
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	11.1	11.1		119.9	119.9	119.9
Effective Green, g (s)	11.1	11.1		119.9	119.9	119.9
Actuated g/C Ratio	0.08	0.08		0.86	0.86	0.86
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	140	125		1133	1595	1355
v/s Ratio Prot	c0.04				0.63	
v/s Ratio Perm		0.00		c0.87		0.07
v/c Ratio	0.52	0.03		1.01	0.73	0.08
Uniform Delay, d1	61.9	59.5		10.0	3.9	1.5
Progression Factor	1.00	1.00		0.95	0.87	1.77
Incremental Delay, d2	3.5	0.1		26.9	0.3	0.0
Delay (s)	65.4	59.6		36.5	3.7	2.8
Level of Service	E	E		D	A	A
Approach Delay (s)	63.0			36.5	3.6	
Approach LOS	E			D	A	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	126.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Volume (vph)	67	45	76	981	1122	115
Future Volume (vph)	67	45	76	981	1122	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	49	83	1066	1220	125
RTOR Reduction (vph)	0	45	0	0	0	31
Lane Group Flow (vph)	73	4	83	1066	1220	94
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	11.1	11.1	11.3	119.9	104.1	104.1
Effective Green, g (s)	11.1	11.1	11.3	119.9	104.1	104.1
Actuated g/C Ratio	0.08	0.08	0.08	0.86	0.74	0.74
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	140	125	142	1595	1385	1177
v/s Ratio Prot	c0.04		0.05	c0.57	c0.65	
v/s Ratio Perm		0.00				0.06
v/c Ratio	0.52	0.03	0.58	0.67	0.88	0.08
Uniform Delay, d1	61.9	59.5	62.1	3.4	13.3	4.9
Progression Factor	1.00	1.00	1.00	1.00	0.70	1.26
Incremental Delay, d2	3.5	0.1	6.0	2.2	6.5	0.1
Delay (s)	65.4	59.6	68.1	5.6	15.9	6.3
Level of Service	E	E	E	A	B	A
Approach Delay (s)	63.0			10.1	15.0	
Approach LOS	E			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix G: 2040 Cumulative Conditions Capacity Analysis Worksheets

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	142	6	67	2	9	5	108	868	0	3	837	24
Future Volume (vph)	142	6	67	2	9	5	108	868	0	3	837	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1690			1681		1770	1743		1805	1752	
Flt Permitted		0.79			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1381			1657		1770	1743		1805	1752	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	145	6	68	2	9	5	110	886	0	3	854	24
RTOR Reduction (vph)	0	12	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	207	0	0	12	0	110	886	0	3	877	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.4			29.1		22.8	74.5		1.1	69.8	
Effective Green, g (s)		21.4			29.1		22.8	74.5		1.1	69.8	
Actuated g/C Ratio		0.15			0.21		0.16	0.53		0.01	0.50	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		211			344		288	927		14	873	
v/s Ratio Prot							0.06	c0.51		c0.00	c0.50	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		0.98			0.03		0.38	0.96		0.21	1.00	
Uniform Delay, d1		59.1			44.2		52.3	31.2		69.0	35.1	
Progression Factor		1.00			1.00		0.86	0.71		1.00	1.00	
Incremental Delay, d2		56.4			0.0		0.2	14.8		2.8	31.6	
Delay (s)		115.5			44.3		45.0	36.9		71.8	66.7	
Level of Service		F			D		D	D		E	E	
Approach Delay (s)		115.5			44.3			37.8			66.7	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	13	5	3	26	55	971	4	22	924	0
Future Vol, veh/h	0	2	13	5	3	26	55	971	4	22	924	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	14	5	3	27	57	1011	4	23	963	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2153	2140	964	2145	2138	1015	964	0	0	1016	0	0
Stage 1	1010	1010	-	1128	1128	-	-	-	-	-	-	-
Stage 2	1143	1130	-	1017	1010	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	35	50	312	36	50	292	722	-	-	691	-	-
Stage 1	292	320	-	250	282	-	-	-	-	-	-	-
Stage 2	246	281	-	289	320	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	27	44	312	30	44	291	721	-	-	690	-	-
Mov Cap-2 Maneuver	27	44	-	30	44	-	-	-	-	-	-	-
Stage 1	269	309	-	230	259	-	-	-	-	-	-	-
Stage 2	203	259	-	265	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28	55.8	0.6	0.2
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	721	-	-	172	105	690	-	-
HCM Lane V/C Ratio	0.079	-	-	0.091	0.337	0.033	-	-
HCM Control Delay (s)	10.4	-	-	28	55.8	10.4	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	1.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	14	0	0	15	39	1016	4	16	922	2
Future Vol, veh/h	1	0	14	0	0	15	39	1016	4	16	922	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	15	0	0	16	41	1081	4	17	981	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2190	2185	983	2190	2184	1084	984	0	0	1086	0	0
Stage 1	1017	1017	-	1166	1166	-	-	-	-	-	-	-
Stage 2	1173	1168	-	1024	1018	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	33	46	305	32	44	258	710	-	-	650	-	-
Stage 1	289	318	-	231	262	-	-	-	-	-	-	-
Stage 2	236	270	-	278	309	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	29	42	305	28	40	258	709	-	-	649	-	-
Mov Cap-2 Maneuver	29	42	-	28	40	-	-	-	-	-	-	-
Stage 1	272	309	-	217	247	-	-	-	-	-	-	-
Stage 2	209	254	-	257	301	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26	19.9	0.4	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	709	-	-	187	258	649	-	-
HCM Lane V/C Ratio	0.059	-	-	0.085	0.062	0.026	-	-
HCM Control Delay (s)	10.4	-	-	26	19.9	10.7	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	1	2	0	127	10	931	3	60	879	1
Future Vol, veh/h	0	0	1	2	0	127	10	931	3	60	879	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	0	0	1	2	0	137	11	1001	3	65	945	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2170	2104	947	2102	2103	1004	947	0	0	1005	0	0
Stage 1	1077	1077	-	1026	1026	-	-	-	-	-	-	-
Stage 2	1093	1027	-	1076	1077	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	34	52	319	38	52	295	733	-	-	678	-	-
Stage 1	268	298	-	284	313	-	-	-	-	-	-	-
Stage 2	262	314	-	267	297	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	17	46	319	35	46	295	732	-	-	677	-	-
Mov Cap-2 Maneuver	17	46	-	35	46	-	-	-	-	-	-	-
Stage 1	264	269	-	279	308	-	-	-	-	-	-	-
Stage 2	139	309	-	241	268	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	32.6	0.1	0.7
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	732	-	-	319	265	677	-	-
HCM Lane V/C Ratio	0.015	-	-	0.003	0.523	0.095	-	-
HCM Control Delay (s)	10	-	-	16.3	32.6	10.9	-	-
HCM Lane LOS	A	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.8	0.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	3	37	24	116	24	67	2	874	47	21	860	3
Future Volume (vph)	3	37	24	116	24	67	2	874	47	21	860	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1666			1714		1805	1746		1570	1726	
Flt Permitted		0.99			0.79		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1651			1388		1805	1746		1570	1726	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	3	40	26	125	26	72	2	940	51	23	925	3
RTOR Reduction (vph)	0	16	0	0	12	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	53	0	0	211	0	2	990	0	23	928	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		24.7			20.4		1.3	84.1		12.9	72.9	
Effective Green, g (s)		24.7			20.4		1.3	84.1		12.9	72.9	
Actuated g/C Ratio		0.18			0.15		0.01	0.60		0.09	0.52	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		291			202		16	1048		144	898	
v/s Ratio Prot							c0.00	c0.57		0.01	c0.54	
v/s Ratio Perm		c0.03			c0.15							
v/c Ratio		0.18			1.04		0.12	0.94		0.16	1.03	
Uniform Delay, d1		49.1			59.8		68.8	25.8		58.6	33.5	
Progression Factor		1.00			1.00		1.00	1.00		0.67	0.34	
Incremental Delay, d2		0.1			75.6		3.5	17.3		0.3	31.4	
Delay (s)		49.2			135.4		72.3	43.1		39.6	42.7	
Level of Service		D			F		E	D		D	D	
Approach Delay (s)		49.2			135.4			43.1			42.6	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	2	0	927	287	0	999
Future Vol, veh/h	2	0	927	287	0	999
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	1053	326	0	1135

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2351	1216	0	0	1379	0
Stage 1	1216	-	-	-	-	-
Stage 2	1135	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	38	216	-	-	504	-
Stage 1	275	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	38	216	-	-	504	-
Mov Cap-2 Maneuver	38	-	-	-	-	-
Stage 1	275	-	-	-	-	-
Stage 2	301	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	105.7	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	38	504	-
HCM Lane V/C Ratio	-	-	0.06	-	-
HCM Control Delay (s)	-	-	105.7	0	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

	⤴	→	⤵	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	45	4	68	3	1	17	38	983	1	8	975	12
Future Volume (vph)	45	4	68	3	1	17	38	983	1	8	975	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1656			1551		1752	1827		1805	1824	
Flt Permitted		0.86			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1459			1494		1752	1827		1805	1824	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	46	4	69	3	1	17	39	1003	1	8	995	12
RTOR Reduction (vph)	0	38	0	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	81	0	0	6	0	39	1004	0	8	1007	0
Confl. Peds. (#/hr)	5					5			2	2		
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	3%	4%	4%	0%	4%	4%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.8			17.7		19.9	77.3		1.3	75.5	
Effective Green, g (s)		12.8			17.7		19.9	77.3		1.3	75.5	
Actuated g/C Ratio		0.09			0.13		0.14	0.55		0.01	0.54	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		133			188		249	1008		16	983	
v/s Ratio Prot							0.02	c0.55		c0.00	c0.55	
v/s Ratio Perm		c0.06			c0.00							
v/c Ratio		0.61			0.03		0.16	1.00		0.50	1.02	
Uniform Delay, d1		61.2			53.6		52.7	31.2		69.0	32.2	
Progression Factor		1.00			1.00		0.90	0.81		1.00	1.00	
Incremental Delay, d2		7.6			0.0		0.1	22.1		8.7	34.9	
Delay (s)		68.8			53.7		47.5	47.4		77.7	67.2	
Level of Service		E			D		D	D		E	E	
Approach Delay (s)		68.8			53.7			47.4			67.3	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: SR 65 & 2nd Street

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	21	31	1005	7	24	1020	0
Future Vol, veh/h	1	0	5	2	0	21	31	1005	7	24	1020	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	4	4	4	3	4	4	0	4	4
Mvmt Flow	1	0	5	2	0	22	32	1036	7	25	1052	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2217	2209	1052	2209	2206	1040	1052	0	0	1043	0	0
Stage 1	1102	1102	-	1104	1104	-	-	-	-	-	-	-
Stage 2	1115	1107	-	1105	1102	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.14	6.54	6.24	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.536	4.036	3.336	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	32	45	278	31	44	277	658	-	-	675	-	-
Stage 1	259	290	-	254	284	-	-	-	-	-	-	-
Stage 2	255	288	-	253	285	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	41	278	28	40	277	658	-	-	675	-	-
Mov Cap-2 Maneuver	28	41	-	28	40	-	-	-	-	-	-	-
Stage 1	246	279	-	242	270	-	-	-	-	-	-	-
Stage 2	224	274	-	239	274	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39	32.2	0.3	0.2
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	658	-	-	112	156	675	-	-
HCM Lane V/C Ratio	0.049	-	-	0.055	0.152	0.037	-	-
HCM Control Delay (s)	10.8	-	-	39	32.2	10.5	-	-
HCM Lane LOS	B	-	-	E	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	23	13	1021	2	22	1000	4
Future Vol, veh/h	0	0	8	1	0	23	13	1021	2	22	1000	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	9	9	9	0	4	4	10	4	4
Mvmt Flow	0	0	8	1	0	24	13	1053	2	23	1031	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2171	2160	1033	2163	2161	1054	1035	0	0	1055	0	0
Stage 1	1079	1079	-	1080	1080	-	-	-	-	-	-	-
Stage 2	1092	1081	-	1083	1081	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.19	6.59	6.29	4.1	-	-	4.2	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.581	4.081	3.381	2.2	-	-	2.29	-	-
Pot Cap-1 Maneuver	34	48	285	33	45	266	679	-	-	630	-	-
Stage 1	267	297	-	256	286	-	-	-	-	-	-	-
Stage 2	262	296	-	255	286	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	30	45	285	31	43	266	679	-	-	630	-	-
Mov Cap-2 Maneuver	30	45	-	31	43	-	-	-	-	-	-	-
Stage 1	262	286	-	251	281	-	-	-	-	-	-	-
Stage 2	234	290	-	239	275	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	25.3	0.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	679	-	-	285	202	630	-	-
HCM Lane V/C Ratio	0.02	-	-	0.029	0.122	0.036	-	-
HCM Control Delay (s)	10.4	-	-	18	25.3	10.9	-	-
HCM Lane LOS	B	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	0	4	0	91	8	942	1	67	936	6
Future Vol, veh/h	1	0	0	4	0	91	8	942	1	67	936	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0	0	4	4	2	4	4
Mvmt Flow	1	0	0	4	0	94	8	971	1	69	965	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2141	2094	968	2094	2097	972	971	0	0	972	0	0
Stage 1	1106	1106	-	988	988	-	-	-	-	-	-	-
Stage 2	1035	988	-	1106	1109	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	36	53	311	39	53	309	718	-	-	709	-	-
Stage 1	258	289	-	300	328	-	-	-	-	-	-	-
Stage 2	282	328	-	258	288	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	23	47	311	36	47	309	718	-	-	709	-	-
Mov Cap-2 Maneuver	23	47	-	36	47	-	-	-	-	-	-	-
Stage 1	255	261	-	297	324	-	-	-	-	-	-	-
Stage 2	194	324	-	233	260	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	168.7	31	0.1	0.7
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	718	-	-	23	234	709	-	-
HCM Lane V/C Ratio	0.011	-	-	0.045	0.419	0.097	-	-
HCM Control Delay (s)	10.1	-	-	168.7	31	10.6	-	-
HCM Lane LOS	B	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.9	0.3	-	-

HCM Signalized Intersection Capacity Analysis
5: SR 65 & Main Street

Timing Plan: 40 CUM PM
11/04/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	38	28	25	296	12	54	24	846	4	48	843	34
Future Volume (vph)	38	28	25	296	12	54	24	846	4	48	843	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.98		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1774			1736		1805	1808		1656	1816	
Flt Permitted		0.93			0.70		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1682			1268		1805	1808		1656	1816	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	39	29	26	302	12	55	24	863	4	49	860	35
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	84	0	0	365	0	24	867	0	49	894	0
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	5%	5%	9%	4%	4%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		26.8			20.4		5.1	78.6		16.3	72.6	
Effective Green, g (s)		26.8			20.4		5.1	78.6		16.3	72.6	
Actuated g/C Ratio		0.19			0.15		0.04	0.56		0.12	0.52	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		321			184		65	1015		192	941	
v/s Ratio Prot							c0.01	c0.48		0.03	c0.49	
v/s Ratio Perm		c0.05			c0.29							
v/c Ratio		0.26			1.98		0.37	0.85		0.26	0.95	
Uniform Delay, d1		48.2			59.8		65.9	25.9		56.3	32.0	
Progression Factor		1.00			1.00		1.00	1.00		0.64	0.40	
Incremental Delay, d2		0.2			460.9		3.5	9.1		0.3	9.9	
Delay (s)		48.3			520.7		69.4	35.0		36.5	22.8	
Level of Service		D			F		E	C		D	C	
Approach Delay (s)		48.3			520.7			35.9			23.6	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	109.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↱			↰
Traffic Vol, veh/h	14	0	903	125	1	1128
Future Vol, veh/h	14	0	903	125	1	1128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	14	0	921	128	1	1151

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2138	985	0	0	1049	0
Stage 1	985	-	-	-	-	-
Stage 2	1153	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	55	304	-	-	660	-
Stage 1	365	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	55	304	-	-	660	-
Mov Cap-2 Maneuver	55	-	-	-	-	-
Stage 1	365	-	-	-	-	-
Stage 2	302	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	92	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	55	660	-
HCM Lane V/C Ratio	-	-	0.26	0.002	-
HCM Control Delay (s)	-	-	92	10.5	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	0.9	0	-

Appendix H: 2040 Cumulative Conditions plus Project Capacity Analysis Worksheets

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	142	6	78	2	9	5	140	1013	0	3	896	24
Future Volume (vph)	142	6	78	2	9	5	140	1013	0	3	896	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1681		1770	1743		1805	1752	
Flt Permitted		0.80			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1389			1653		1770	1743		1805	1752	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	142	6	78	2	9	5	140	1013	0	3	896	24
RTOR Reduction (vph)	0	14	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	212	0	0	12	0	140	1013	0	3	920	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.4			25.4		25.2	78.2		1.1	71.1	
Effective Green, g (s)		21.4			25.4		25.2	78.2		1.1	71.1	
Actuated g/C Ratio		0.15			0.18		0.18	0.56		0.01	0.51	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		212			299		318	973		14	889	
v/s Ratio Prot							0.08	c0.58		c0.00	c0.52	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		1.00			0.04		0.44	1.04		0.21	1.03	
Uniform Delay, d1		59.3			47.2		51.1	30.9		69.0	34.5	
Progression Factor		1.00			1.00		0.84	0.68		1.00	1.00	
Incremental Delay, d2		62.4			0.0		0.2	31.2		2.8	39.4	
Delay (s)		121.7			47.3		43.2	52.2		71.8	73.8	
Level of Service		F			D		D	D		E	E	
Approach Delay (s)		121.7			47.3			51.1			73.8	
Approach LOS		F			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	67.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th TWSC
2: SR 65 & 2nd Street

Timing Plan: 40 CUM + PROJ AM
11/04/2023

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	13	5	3	26	55	1148	4	22	994	0
Future Vol, veh/h	0	2	13	5	3	26	55	1148	4	22	994	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	1148	4	22	994	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2315	2302	995	2307	2300	1152	995	0	0	1153	0	0
Stage 1	1039	1039	-	1261	1261	-	-	-	-	-	-	-
Stage 2	1276	1263	-	1046	1039	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	300	27	39	243	703	-	-	613	-	-
Stage 1	281	310	-	211	244	-	-	-	-	-	-	-
Stage 2	207	243	-	278	310	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	35	300	23	35	243	702	-	-	612	-	-
Mov Cap-2 Maneuver	21	35	-	23	35	-	-	-	-	-	-	-
Stage 1	259	299	-	194	225	-	-	-	-	-	-	-
Stage 2	168	224	-	255	299	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	31.8			75.7			0.5			0.2		
HCM LOS	D			F								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	702	-	-	149	83	612	-	-
HCM Lane V/C Ratio	0.078	-	-	0.101	0.41	0.036	-	-
HCM Control Delay (s)	10.6	-	-	31.8	75.7	11.1	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	1.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	14	0	0	15	39	1193	4	16	992	2
Future Vol, veh/h	1	0	14	0	0	15	39	1193	4	16	992	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	1193	4	16	992	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2307	2302	994	2306	2301	1196	995	0	0	1198	0	0
Stage 1	1026	1026	-	1274	1274	-	-	-	-	-	-	-
Stage 2	1281	1276	-	1032	1027	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	300	26	37	221	703	-	-	590	-	-
Stage 1	286	315	-	200	233	-	-	-	-	-	-	-
Stage 2	205	240	-	275	305	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	24	36	300	23	34	221	702	-	-	589	-	-
Mov Cap-2 Maneuver	24	36	-	23	34	-	-	-	-	-	-	-
Stage 1	270	306	-	189	220	-	-	-	-	-	-	-
Stage 2	180	226	-	255	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.2	22.5	0.3	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	702	-	-	170	221	589	-	-
HCM Lane V/C Ratio	0.056	-	-	0.088	0.068	0.027	-	-
HCM Control Delay (s)	10.4	-	-	28.2	22.5	11.3	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	1	2	0	127	10	1108	3	60	949	1
Future Vol, veh/h	0	0	1	2	0	127	10	1108	3	60	949	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	0	0	1	2	0	127	10	1108	3	60	949	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2264	2203	951	2201	2202	1111	951	0	0	1112	0	0
Stage 1	1071	1071	-	1131	1131	-	-	-	-	-	-	-
Stage 2	1193	1132	-	1070	1071	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	29	45	318	32	45	255	730	-	-	617	-	-
Stage 1	270	300	-	248	280	-	-	-	-	-	-	-
Stage 2	230	281	-	269	298	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	13	40	318	29	40	255	729	-	-	616	-	-
Mov Cap-2 Maneuver	13	40	-	29	40	-	-	-	-	-	-	-
Stage 1	266	271	-	244	276	-	-	-	-	-	-	-
Stage 2	114	277	-	242	269	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.4	39.6	0.1	0.7
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	729	-	-	318	228	616	-	-
HCM Lane V/C Ratio	0.014	-	-	0.003	0.566	0.097	-	-
HCM Control Delay (s)	10	-	-	16.4	39.6	11.5	-	-
HCM Lane LOS	B	-	-	C	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	3.1	0.3	-	-

HCM Signalized Intersection Capacity Analysis
5: SR 65 & Main Street

Timing Plan: 40 CUM + PROJ AM
11/04/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	3	37	29	127	24	67	18	1051	63	21	930	3
Future Volume (vph)	3	37	29	127	24	67	18	1051	63	21	930	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.96		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1656			1717		1805	1744		1570	1726	
Flt Permitted		0.99			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1642			1380		1805	1744		1570	1726	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	37	29	127	24	67	18	1051	63	21	930	3
RTOR Reduction (vph)	0	19	0	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	50	0	0	207	0	18	1112	0	21	933	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		24.5			20.4		3.3	85.3		11.9	74.1	
Effective Green, g (s)		24.5			20.4		3.3	85.3		11.9	74.1	
Actuated g/C Ratio		0.18			0.15		0.02	0.61		0.09	0.53	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		287			201		42	1062		133	913	
v/s Ratio Prot							c0.01	c0.64		0.01	c0.54	
v/s Ratio Perm		c0.03			c0.15							
v/c Ratio		0.17			1.03		0.43	1.05		0.16	1.02	
Uniform Delay, d1		49.1			59.8		67.4	27.4		59.4	33.0	
Progression Factor		1.00			1.00		1.00	1.00		0.67	0.35	
Incremental Delay, d2		0.1			71.3		6.9	40.9		0.2	24.8	
Delay (s)		49.2			131.1		74.3	68.3		40.3	36.2	
Level of Service		D			F		E	E		D	D	
Approach Delay (s)		49.2			131.1			68.3			36.3	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	60.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	2	0	1136	287	0	1085
Future Vol, veh/h	2	0	1136	287	0	1085
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	1136	287	0	1085

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2365	1280	0	0	1423	0
Stage 1	1280	-	-	-	-	-
Stage 2	1085	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	38	198	-	-	484	-
Stage 1	256	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	38	198	-	-	484	-
Mov Cap-2 Maneuver	38	-	-	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	318	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	104.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	38	484	-
HCM Lane V/C Ratio	-	-	0.053	-	-
HCM Control Delay (s)	-	-	104.9	0	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	35.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Vol, veh/h	105	56	11	1213	999	43
Future Vol, veh/h	105	56	11	1213	999	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	300
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	56	11	1213	999	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2234	999	1042	0	-	0
Stage 1	999	-	-	-	-	-
Stage 2	1235	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 47	295	667	-	-	-
Stage 1	356	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 45	295	667	-	-	-
Mov Cap-2 Maneuver	~ 45	-	-	-	-	-
Stage 1	338	-	-	-	-	-
Stage 2	274	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 530.1	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	667	-	45	295	-	-
HCM Lane V/C Ratio	0.016	-	2.333	0.19	-	-
HCM Control Delay (s)	10.5	0	$ 802.1	20	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	11.1	0.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Vol, veh/h	105	56	11	1213	1055	43
Future Vol, veh/h	105	56	11	1213	1055	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	300
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	56	11	1213	1055	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2290	1055	1098	0	-	0
Stage 1	1055	-	-	-	-	-
Stage 2	1235	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 43	274	636	-	-	-
Stage 1	335	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 42	274	636	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	274	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	636	-	202	274	-	-
HCM Lane V/C Ratio	0.017	-	0.52	0.204	-	-
HCM Control Delay (s)	10.8	-	40.6	21.5	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.1	-	2.7	0.8	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

1: SR 65 & First Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	45	4	106	3	1	17	60	1039	1	8	1071	12
Future Volume (vph)	45	4	106	3	1	17	60	1039	1	8	1071	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.96		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1628			1521		1770	1743		1805	1756	
Flt Permitted		0.89			0.93		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1477			1422		1770	1743		1805	1756	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	4	106	3	1	17	60	1039	1	8	1071	12
RTOR Reduction (vph)	0	59	0	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	6	0	60	1040	0	8	1083	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		13.9			17.9		19.9	78.2		1.3	76.4	
Effective Green, g (s)		13.9			17.9		19.9	78.2		1.3	76.4	
Actuated g/C Ratio		0.10			0.13		0.14	0.56		0.01	0.55	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		146			181		251	973		16	958	
v/s Ratio Prot							0.03	c0.60		c0.00	c0.62	
v/s Ratio Perm		c0.06			c0.00							
v/c Ratio		0.65			0.03		0.24	1.07		0.50	1.13	
Uniform Delay, d1		60.7			53.5		53.3	30.9		69.0	31.8	
Progression Factor		1.00			1.00		0.86	0.76		1.00	1.00	
Incremental Delay, d2		10.1			0.0		0.1	41.5		8.7	71.8	
Delay (s)		70.8			53.5		46.1	64.9		77.7	103.6	
Level of Service		E			D		D	E		E	F	
Approach Delay (s)		70.8			53.5			63.9			103.4	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	82.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	21	31	1083	7	24	1154	0
Future Vol, veh/h	1	0	5	2	0	21	31	1083	7	24	1154	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	1	0	5	2	0	21	31	1083	7	24	1154	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2363	2356	1155	2355	2353	1089	1155	0	0	1091	0	0
Stage 1	1203	1203	-	1150	1150	-	-	-	-	-	-	-
Stage 2	1160	1153	-	1205	1203	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	242	25	36	264	612	-	-	647	-	-
Stage 1	227	260	-	243	275	-	-	-	-	-	-	-
Stage 2	240	274	-	227	260	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	33	242	23	33	263	611	-	-	646	-	-
Mov Cap-2 Maneuver	21	33	-	23	33	-	-	-	-	-	-	-
Stage 1	215	250	-	230	261	-	-	-	-	-	-	-
Stage 2	209	260	-	214	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.9	36.2	0.3	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	611	-	-	88	138	646	-	-
HCM Lane V/C Ratio	0.051	-	-	0.068	0.167	0.037	-	-
HCM Control Delay (s)	11.2	-	-	48.9	36.2	10.8	-	-
HCM Lane LOS	B	-	-	E	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	23	13	1099	2	22	1134	4
Future Vol, veh/h	0	0	8	1	0	23	13	1099	2	22	1134	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	0	0	8	1	0	23	13	1099	2	22	1134	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2319	2309	1137	2311	2310	1101	1139	0	0	1102	0	0
Stage 1	1181	1181	-	1127	1127	-	-	-	-	-	-	-
Stage 2	1138	1128	-	1184	1183	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	248	26	37	252	621	-	-	641	-	-
Stage 1	234	266	-	243	274	-	-	-	-	-	-	-
Stage 2	247	282	-	225	257	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	23	37	248	24	35	252	620	-	-	640	-	-
Mov Cap-2 Maneuver	23	37	-	24	35	-	-	-	-	-	-	-
Stage 1	229	257	-	238	268	-	-	-	-	-	-	-
Stage 2	220	276	-	210	248	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	27.9	0.1	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	620	-	-	248	181	640	-	-
HCM Lane V/C Ratio	0.021	-	-	0.032	0.133	0.034	-	-
HCM Control Delay (s)	10.9	-	-	20	27.9	10.8	-	-
HCM Lane LOS	B	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	0	4	0	91	8	1020	1	67	1070	6
Future Vol, veh/h	1	0	0	4	0	91	8	1020	1	67	1070	6
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	1	0	0	4	0	91	8	1020	1	67	1070	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2290	2246	1074	2245	2249	1022	1077	0	0	1022	0	0
Stage 1	1208	1208	-	1038	1038	-	-	-	-	-	-	-
Stage 2	1082	1038	-	1207	1211	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	28	42	270	30	42	288	655	-	-	668	-	-
Stage 1	226	258	-	280	309	-	-	-	-	-	-	-
Stage 2	266	311	-	225	256	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	18	37	270	27	37	288	654	-	-	667	-	-
Mov Cap-2 Maneuver	18	37	-	27	37	-	-	-	-	-	-	-
Stage 1	223	232	-	276	305	-	-	-	-	-	-	-
Stage 2	180	307	-	202	230	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	216.5	36.9	0.1	0.6
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	654	-	-	18	205	667	-	-
HCM Lane V/C Ratio	0.012	-	-	0.056	0.463	0.1	-	-
HCM Control Delay (s)	10.6	-	-	216.5	36.9	11	-	-
HCM Lane LOS	B	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	2.2	0.3	-	-

HCM Signalized Intersection Capacity Analysis
5: SR 65 & Main Street

Timing Plan: 40 CUM + PROJ PM
11/04/2023

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	38	28	63	353	12	54	46	924	38	48	977	34
Future Volume (vph)	38	28	63	353	12	54	46	924	38	48	977	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1619			1749		1805	1749		1570	1719	
Flt Permitted		0.96			0.64		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1570			1163		1805	1749		1570	1719	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	28	63	353	12	54	46	924	38	48	977	34
RTOR Reduction (vph)	0	25	0	0	3	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	104	0	0	416	0	46	961	0	48	1010	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		24.4			20.4		7.8	82.6		14.7	76.0	
Effective Green, g (s)		24.4			20.4		7.8	82.6		14.7	76.0	
Actuated g/C Ratio		0.17			0.15		0.06	0.59		0.10	0.54	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		273			169		100	1031		164	933	
v/s Ratio Prot							c0.03	c0.55		0.03	c0.59	
v/s Ratio Perm		c0.07			c0.36							
v/c Ratio		0.38			2.46		0.46	0.93		0.29	1.08	
Uniform Delay, d1		51.1			59.8		64.1	26.2		57.8	32.0	
Progression Factor		1.00			1.00		1.00	1.00		0.66	0.42	
Incremental Delay, d2		0.3			674.1		3.3	15.8		0.1	39.3	
Delay (s)		51.5			733.9		67.4	42.0		38.2	52.7	
Level of Service		D			F		E	D		D	D	
Approach Delay (s)		51.5			733.9			43.1			52.1	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	157.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	14	0	1037	125	1	1357
Future Vol, veh/h	14	0	1037	125	1	1357
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	14	0	1037	125	1	1357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2459	1100	0	0	1162	0
Stage 1	1100	-	-	-	-	-
Stage 2	1359	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	33	253	-	-	608	-
Stage 1	313	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	33	253	-	-	608	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	313	-	-	-	-	-
Stage 2	232	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	178.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	33	608	-
HCM Lane V/C Ratio	-	-	0.424	0.002	-
HCM Control Delay (s)	-	-	178.5	10.9	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	1.4	0	-

Intersection	
Int Delay, s/veh	25

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Vol, veh/h	67	45	76	1027	1128	115
Future Vol, veh/h	67	45	76	1027	1128	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	300
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	45	76	1027	1128	115

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2307	1128	1243	0	-	0
Stage 1	1128	-	-	-	-	-
Stage 2	1179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 42	249	560	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 29	249	560	-	-	-
Mov Cap-2 Maneuver	~ 29	-	-	-	-	-
Stage 1	211	-	-	-	-	-
Stage 2	292	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 540.7	0.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	560	-	29	249	-	-
HCM Lane V/C Ratio	0.136	-	2.31	0.181	-	-
HCM Control Delay (s)	12.4	0	$ 888.7	22.6	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.5	-	7.9	0.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Vol, veh/h	67	45	76	1027	1173	115
Future Vol, veh/h	67	45	76	1027	1173	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	300
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	45	76	1027	1173	115

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2352	1173	1288	0	-	0
Stage 1	1173	-	-	-	-	-
Stage 2	1179	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 39	234	538	-	-	-
Stage 1	294	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 34	234	538	-	-	-
Mov Cap-2 Maneuver	182	-	-	-	-	-
Stage 1	253	-	-	-	-	-
Stage 2	292	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.1	0.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	538	-	182	234	-	-
HCM Lane V/C Ratio	0.141	-	0.368	0.192	-	-
HCM Control Delay (s)	12.8	-	35.9	24	-	-
HCM Lane LOS	B	-	E	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1.6	0.7	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Appendix I: 2040 Cumulative Conditions plus Project with Mitigation Capacity Analysis Worksheets

HCM Signalized Intersection Capacity Analysis
1: SR 65 & First Street

Timing Plan: 40 CUM + PROJ w/ MIT AM
11/04/2023

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	142	6	78	2	9	5	140	1013	0	3	896	24
Future Volume (vph)	142	6	78	2	9	5	140	1013	0	3	896	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	1.00	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1681		1770	1743		1805	1752	
Flt Permitted		0.80			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1389			1655		1770	1743		1805	1752	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	142	6	78	2	9	5	140	1013	0	3	896	24
RTOR Reduction (vph)	0	13	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	213	0	0	12	0	140	1013	0	3	919	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		23.4			27.8		17.7	85.2		1.0	76.2	
Effective Green, g (s)		23.4			27.8		17.7	85.2		1.0	76.2	
Actuated g/C Ratio		0.17			0.20		0.13	0.61		0.01	0.54	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		232			328		223	1060		12	953	
v/s Ratio Prot							0.08	c0.58		c0.00	c0.52	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		0.92			0.04		0.63	0.96		0.25	0.96	
Uniform Delay, d1		57.3			45.3		58.0	25.6		69.1	30.6	
Progression Factor		1.00			1.00		0.78	0.39		1.00	1.00	
Incremental Delay, d2		36.9			0.0		2.6	14.2		4.0	21.7	
Delay (s)		94.2			45.3		47.8	24.3		73.1	52.3	
Level of Service		F			D		D	C		E	D	
Approach Delay (s)		94.2			45.3			27.2			52.4	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	13	5	3	26	55	1148	4	22	994	0
Future Vol, veh/h	0	2	13	5	3	26	55	1148	4	22	994	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	1148	4	22	994	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2315	2302	995	2307	2300	1152	995	0	0	1153	0	0
Stage 1	1039	1039	-	1261	1261	-	-	-	-	-	-	-
Stage 2	1276	1263	-	1046	1039	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	300	27	39	243	703	-	-	613	-	-
Stage 1	281	310	-	211	244	-	-	-	-	-	-	-
Stage 2	207	243	-	278	310	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	35	300	23	35	243	702	-	-	612	-	-
Mov Cap-2 Maneuver	21	35	-	23	35	-	-	-	-	-	-	-
Stage 1	259	299	-	194	225	-	-	-	-	-	-	-
Stage 2	168	224	-	255	299	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.8	75.7	0.5	0.2
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	702	-	-	149	83	612	-	-
HCM Lane V/C Ratio	0.078	-	-	0.101	0.41	0.036	-	-
HCM Control Delay (s)	10.6	-	-	31.8	75.7	11.1	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	1.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	14	0	0	15	39	1193	4	16	992	2
Future Vol, veh/h	1	0	14	0	0	15	39	1193	4	16	992	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	1193	4	16	992	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2307	2302	994	2306	2301	1196	995	0	0	1198	0	0
Stage 1	1026	1026	-	1274	1274	-	-	-	-	-	-	-
Stage 2	1281	1276	-	1032	1027	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	300	26	37	221	703	-	-	590	-	-
Stage 1	286	315	-	200	233	-	-	-	-	-	-	-
Stage 2	205	240	-	275	305	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	24	36	300	23	34	221	702	-	-	589	-	-
Mov Cap-2 Maneuver	24	36	-	23	34	-	-	-	-	-	-	-
Stage 1	270	306	-	189	220	-	-	-	-	-	-	-
Stage 2	180	226	-	255	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.2	22.5	0.3	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	702	-	-	170	221	589	-	-
HCM Lane V/C Ratio	0.056	-	-	0.088	0.068	0.027	-	-
HCM Control Delay (s)	10.4	-	-	28.2	22.5	11.3	-	-
HCM Lane LOS	B	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.2	0.1	-	-

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	0	0	1	2	0	127	10	1108	3	60	949	1
Future Volume (vph)	0	0	1	2	0	127	10	1108	3	60	949	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.86			0.87		1.00	1.00		1.00	1.00	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644			1630		1805	1758		1719	1727	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1644			1624		1805	1758		1719	1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	1	2	0	127	10	1108	3	60	949	1
RTOR Reduction (vph)	0	1	0	0	120	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	9	0	10	1111	0	60	950	0
Confl. Peds. (#/hr)							1		1	1		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	8%	8%	5%	10%	10%
Turn Type		NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		7.5			7.5		1.6	110.0		9.0	117.4	
Effective Green, g (s)		7.5			7.5		1.6	110.0		9.0	117.4	
Actuated g/C Ratio		0.05			0.05		0.01	0.79		0.06	0.84	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		88			87		20	1381		110	1448	
v/s Ratio Prot		0.00					0.01	c0.63		c0.03	c0.55	
v/s Ratio Perm					c0.01							
v/c Ratio		0.00			0.10		0.50	0.80		0.55	0.66	
Uniform Delay, d1		62.7			63.0		68.8	8.7		63.5	4.1	
Progression Factor		1.00			1.00		1.18	0.33		1.12	0.09	
Incremental Delay, d2		0.0			0.5		6.0	1.6		2.9	1.2	
Delay (s)		62.7			63.6		86.9	4.5		73.9	1.6	
Level of Service		E			E		F	A		E	A	
Approach Delay (s)		62.7			63.6			5.2			5.9	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✢			✢		↰	↱		↰	↱	
Traffic Volume (vph)	3	37	29	127	24	67	18	1051	63	21	930	3
Future Volume (vph)	3	37	29	127	24	67	18	1051	63	21	930	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.96		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1656			1717		1805	1744		1570	1726	
Flt Permitted		0.99			0.78		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1643			1380		1805	1744		1570	1726	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	37	29	127	24	67	18	1051	63	21	930	3
RTOR Reduction (vph)	0	18	0	0	11	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	51	0	0	207	0	18	1112	0	21	933	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		28.1			21.2		2.0	90.4		4.0	86.6	
Effective Green, g (s)		28.1			21.2		2.0	90.4		4.0	86.6	
Actuated g/C Ratio		0.20			0.15		0.01	0.65		0.03	0.62	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		329			208		25	1126		44	1067	
v/s Ratio Prot							c0.01	c0.64		0.01	c0.54	
v/s Ratio Perm		c0.03			c0.15							
v/c Ratio		0.15			1.00		0.72	0.99		0.48	0.87	
Uniform Delay, d1		46.1			59.3		68.7	24.3		67.0	22.2	
Progression Factor		1.00			1.00		0.95	0.81		0.74	0.32	
Incremental Delay, d2		0.1			60.6		50.6	19.6		6.2	7.9	
Delay (s)		46.2			119.9		116.2	39.4		55.6	15.0	
Level of Service		D			F		F	D		E	B	
Approach Delay (s)		46.2			119.9			40.6			15.9	
Approach LOS		D			F			D			B	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	2	0	1136	287	0	1085
Future Vol, veh/h	2	0	1136	287	0	1085
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	1136	287	0	1085

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2365	1280	0	0	1423	0
Stage 1	1280	-	-	-	-	-
Stage 2	1085	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	38	198	-	-	484	-
Stage 1	256	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	38	198	-	-	484	-
Mov Cap-2 Maneuver	38	-	-	-	-	-
Stage 1	256	-	-	-	-	-
Stage 2	318	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	104.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	38	484	-
HCM Lane V/C Ratio	-	-	0.053	-	-
HCM Control Delay (s)	-	-	104.9	0	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Volume (vph)	105	56	11	1213	999	43
Future Volume (vph)	105	56	11	1213	999	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		1862	1863	1583
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1770	1583		1843	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	56	11	1213	999	43
RTOR Reduction (vph)	0	51	0	0	0	7
Lane Group Flow (vph)	105	5	0	1224	999	36
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	13.4	13.4		117.6	117.6	117.6
Effective Green, g (s)	13.4	13.4		117.6	117.6	117.6
Actuated g/C Ratio	0.10	0.10		0.84	0.84	0.84
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	169	151		1548	1564	1329
v/s Ratio Prot	c0.06				0.54	
v/s Ratio Perm		0.00		c0.66		0.02
v/c Ratio	0.62	0.04		0.79	0.64	0.03
Uniform Delay, d1	60.9	57.4		5.3	3.9	1.8
Progression Factor	1.00	1.00		0.53	0.39	0.34
Incremental Delay, d2	6.9	0.1		2.7	1.1	0.0
Delay (s)	67.8	57.5		5.6	2.6	0.6
Level of Service	E	E		A	A	A
Approach Delay (s)	64.2			5.6	2.5	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Volume (vph)	105	56	11	1213	1055	43
Future Volume (vph)	105	56	11	1213	1055	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	56	11	1213	1055	43
RTOR Reduction (vph)	0	51	0	0	0	9
Lane Group Flow (vph)	105	5	11	1213	1055	34
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.4	13.4	2.4	117.6	110.7	110.7
Effective Green, g (s)	13.4	13.4	2.4	117.6	110.7	110.7
Actuated g/C Ratio	0.10	0.10	0.02	0.84	0.79	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	169	151	30	1564	1473	1251
v/s Ratio Prot	c0.06		0.01	c0.65	0.57	
v/s Ratio Perm		0.00				0.02
v/c Ratio	0.62	0.04	0.37	0.78	0.72	0.03
Uniform Delay, d1	60.9	57.4	68.0	5.1	7.1	3.1
Progression Factor	1.00	1.00	1.00	1.00	0.99	1.71
Incremental Delay, d2	6.9	0.1	7.4	3.8	2.4	0.0
Delay (s)	67.8	57.5	75.5	9.0	9.5	5.4
Level of Service	E	E	E	A	A	A
Approach Delay (s)	64.2			9.6	9.3	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	45	4	106	3	1	17	60	1039	1	8	1071	12
Future Volume (vph)	45	4	106	3	1	17	60	1039	1	8	1071	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.96		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1628			1520		1770	1743		1805	1756	
Flt Permitted		0.89			0.91		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1477			1398		1770	1743		1805	1756	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	4	106	3	1	17	60	1039	1	8	1071	12
RTOR Reduction (vph)	0	57	0	0	15	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	98	0	0	6	0	60	1040	0	8	1083	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		13.0			16.0		8.9	95.0		1.0	94.8	
Effective Green, g (s)		13.0			16.0		8.9	95.0		1.0	94.8	
Actuated g/C Ratio		0.09			0.11		0.06	0.68		0.01	0.68	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		137			159		112	1182		12	1189	
v/s Ratio Prot							0.03	c0.60		c0.00	c0.62	
v/s Ratio Perm		c0.07			c0.00							
v/c Ratio		0.71			0.04		0.54	0.88		0.67	0.91	
Uniform Delay, d1		61.7			55.1		63.5	17.9		69.3	19.0	
Progression Factor		1.00			1.00		0.85	0.36		1.00	1.00	
Incremental Delay, d2		16.2			0.0		1.8	7.2		73.9	11.9	
Delay (s)		77.9			55.2		56.1	13.6		143.3	30.9	
Level of Service		E			E		E	B		F	C	
Approach Delay (s)		77.9			55.2			15.9			31.8	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	21	31	1083	7	24	1154	0
Future Vol, veh/h	1	0	5	2	0	21	31	1083	7	24	1154	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	1	0	5	2	0	21	31	1083	7	24	1154	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2363	2356	1155	2355	2353	1089	1155	0	0	1091	0	0
Stage 1	1203	1203	-	1150	1150	-	-	-	-	-	-	-
Stage 2	1160	1153	-	1205	1203	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	25	36	242	25	36	264	612	-	-	647	-	-
Stage 1	227	260	-	243	275	-	-	-	-	-	-	-
Stage 2	240	274	-	227	260	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	33	242	23	33	263	611	-	-	646	-	-
Mov Cap-2 Maneuver	21	33	-	23	33	-	-	-	-	-	-	-
Stage 1	215	250	-	230	261	-	-	-	-	-	-	-
Stage 2	209	260	-	214	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	48.9	36.2	0.3	0.2
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	611	-	-	88	138	646	-	-
HCM Lane V/C Ratio	0.051	-	-	0.068	0.167	0.037	-	-
HCM Control Delay (s)	11.2	-	-	48.9	36.2	10.8	-	-
HCM Lane LOS	B	-	-	E	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	23	13	1099	2	22	1134	4
Future Vol, veh/h	0	0	8	1	0	23	13	1099	2	22	1134	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	0	0	8	1	0	23	13	1099	2	22	1134	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2319	2309	1137	2311	2310	1101	1139	0	0	1102	0	0
Stage 1	1181	1181	-	1127	1127	-	-	-	-	-	-	-
Stage 2	1138	1128	-	1184	1183	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	27	39	248	26	37	252	621	-	-	641	-	-
Stage 1	234	266	-	243	274	-	-	-	-	-	-	-
Stage 2	247	282	-	225	257	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	23	37	248	24	35	252	620	-	-	640	-	-
Mov Cap-2 Maneuver	23	37	-	24	35	-	-	-	-	-	-	-
Stage 1	229	257	-	238	268	-	-	-	-	-	-	-
Stage 2	220	276	-	210	248	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	20			27.9			0.1			0.2		
HCM LOS	C			D								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	620	-	-	248	181	640	-	-
HCM Lane V/C Ratio	0.021	-	-	0.032	0.133	0.034	-	-
HCM Control Delay (s)	10.9	-	-	20	27.9	10.8	-	-
HCM Lane LOS	B	-	-	C	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.1	-	-

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	1	0	0	4	0	91	8	1020	1	67	1070	6
Future Volume (vph)	1	0	0	4	0	91	8	1020	1	67	1070	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.87		1.00	1.00		1.00	1.00	
Flt Protected		0.95			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805			1634		1805	1759		1719	1726	
Flt Permitted		0.55			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1041			1616		1805	1759		1719	1726	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	4	0	91	8	1020	1	67	1070	6
RTOR Reduction (vph)	0	0	0	0	86	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	9	0	8	1021	0	67	1076	0
Confl. Peds. (#/hr)							1		1	1		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	8%	8%	5%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		7.3			7.3		1.5	109.7		9.5	117.7	
Effective Green, g (s)		7.3			7.3		1.5	109.7		9.5	117.7	
Actuated g/C Ratio		0.05			0.05		0.01	0.78		0.07	0.84	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		54			84		19	1378		116	1451	
v/s Ratio Prot							0.00	0.58		c0.04	c0.62	
v/s Ratio Perm		0.00			c0.01							
v/c Ratio		0.02			0.10		0.42	0.74		0.58	0.74	
Uniform Delay, d1		63.0			63.2		68.8	7.8		63.3	4.7	
Progression Factor		1.00			1.00		1.25	0.45		1.01	0.42	
Incremental Delay, d2		0.1			0.5		4.7	1.2		3.5	1.8	
Delay (s)		63.1			63.8		90.6	4.7		67.6	3.8	
Level of Service		E			E		F	A		E	A	
Approach Delay (s)		63.1			63.8			5.3			7.5	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	38	28	63	353	12	54	46	924	38	48	977	34
Future Volume (vph)	38	28	63	353	12	54	46	924	38	48	977	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1619			1750		1805	1749		1570	1719	
Flt Permitted		0.91			0.66		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1495			1208		1805	1749		1570	1719	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	28	63	353	12	54	46	924	38	48	977	34
RTOR Reduction (vph)	0	25	0	0	4	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	104	0	0	415	0	46	961	0	48	1010	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		38.4			35.4		4.0	78.0		6.3	78.4	
Effective Green, g (s)		38.4			35.4		4.0	78.0		6.3	78.4	
Actuated g/C Ratio		0.27			0.25		0.03	0.56		0.04	0.56	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		410			305		51	974		70	962	
v/s Ratio Prot							c0.03	c0.55		0.03	c0.59	
v/s Ratio Perm		c0.07			c0.34							
v/c Ratio		0.25			1.36		0.90	0.99		0.69	1.05	
Uniform Delay, d1		39.6			52.3		67.8	30.5		65.9	30.8	
Progression Factor		1.00			1.00		0.95	1.02		0.88	0.69	
Incremental Delay, d2		0.1			182.5		66.6	19.7		17.3	38.3	
Delay (s)		39.8			234.8		131.1	50.7		75.0	59.5	
Level of Service		D			F		F	D		E	E	
Approach Delay (s)		39.8			234.8			54.3			60.2	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	84.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	14	0	1037	125	1	1357
Future Vol, veh/h	14	0	1037	125	1	1357
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	14	0	1037	125	1	1357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2459	1100	0	0	1162	0
Stage 1	1100	-	-	-	-	-
Stage 2	1359	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	33	253	-	-	608	-
Stage 1	313	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	33	253	-	-	608	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	313	-	-	-	-	-
Stage 2	232	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	178.5		0		0	
HCM LOS	F					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	33	608	-
HCM Lane V/C Ratio	-	-	0.424	0.002	-
HCM Control Delay (s)	-	-	178.5	10.9	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	1.4	0	-

HCM Signalized Intersection Capacity Analysis

Timing Plan: 40 CUM + PROJ w/ MIT PM

7: SR 65 & Red Oak Drive

11/04/2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Volume (vph)	67	45	76	1027	1128	115
Future Volume (vph)	67	45	76	1027	1128	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		1856	1863	1583
Flt Permitted	0.95	1.00		0.79	1.00	1.00
Satd. Flow (perm)	1770	1583		1465	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	67	45	76	1027	1128	115
RTOR Reduction (vph)	0	42	0	0	0	15
Lane Group Flow (vph)	67	3	0	1103	1128	100
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	9.4	9.4		121.6	121.6	121.6
Effective Green, g (s)	9.4	9.4		121.6	121.6	121.6
Actuated g/C Ratio	0.07	0.07		0.87	0.87	0.87
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	118	106		1272	1618	1374
v/s Ratio Prot	c0.04				0.61	
v/s Ratio Perm		0.00		c0.75		0.06
v/c Ratio	0.57	0.03		0.87	0.70	0.07
Uniform Delay, d1	63.3	61.0		4.9	3.1	1.3
Progression Factor	1.00	1.00		0.85	0.96	1.90
Incremental Delay, d2	6.1	0.1		6.7	0.2	0.0
Delay (s)	69.5	61.1		10.8	3.2	2.5
Level of Service	E	E		B	A	A
Approach Delay (s)	66.1			10.8	3.1	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	128.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Volume (vph)	67	45	76	1027	1173	115
Future Volume (vph)	67	45	76	1027	1173	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	67	45	76	1027	1173	115
RTOR Reduction (vph)	0	42	0	0	0	27
Lane Group Flow (vph)	67	3	76	1027	1173	88
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	9.4	9.4	10.9	121.6	106.2	106.2
Effective Green, g (s)	9.4	9.4	10.9	121.6	106.2	106.2
Actuated g/C Ratio	0.07	0.07	0.08	0.87	0.76	0.76
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	118	106	137	1618	1413	1200
v/s Ratio Prot	c0.04		0.04	c0.55	c0.63	
v/s Ratio Perm		0.00				0.06
v/c Ratio	0.57	0.03	0.55	0.63	0.83	0.07
Uniform Delay, d1	63.3	61.0	62.2	2.7	11.0	4.3
Progression Factor	1.00	1.00	1.00	1.00	0.99	1.87
Incremental Delay, d2	6.1	0.1	4.8	1.9	4.7	0.1
Delay (s)	69.5	61.1	67.0	4.6	15.6	8.2
Level of Service	E	E	E	A	B	A
Approach Delay (s)	66.1			8.9	14.9	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix J: 2040 Cumulative Conditions with the SR 65 Realignment Capacity Analysis Worksheets

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	142	6	67	2	9	5	108	615	0	3	589	24
Future Volume (vph)	142	6	67	2	9	5	108	615	0	3	589	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.96		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1689			1682		1770	1743		1805	1749	
Flt Permitted		0.79			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1381			1663		1770	1743		1805	1749	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	142	6	67	2	9	5	108	615	0	3	589	24
RTOR Reduction (vph)	0	12	0	0	3	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	203	0	0	13	0	108	615	0	3	612	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.4			46.0		20.1	57.6		1.1	55.6	
Effective Green, g (s)		21.4			46.0		20.1	57.6		1.1	55.6	
Actuated g/C Ratio		0.15			0.33		0.14	0.41		0.01	0.40	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		211			546		254	717		14	694	
v/s Ratio Prot							0.06	c0.35		c0.00	c0.35	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		0.96			0.02		0.43	0.86		0.21	0.88	
Uniform Delay, d1		58.9			31.8		54.7	37.5		69.0	39.1	
Progression Factor		1.00			1.00		0.81	0.62		1.00	1.00	
Incremental Delay, d2		51.0			0.0		0.4	11.1		2.8	15.1	
Delay (s)		109.9			31.8		44.7	34.4		71.8	54.2	
Level of Service		F			C		D	C		E	D	
Approach Delay (s)		109.9			31.8			36.0			54.3	
Approach LOS		F			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	13	5	3	26	55	718	4	22	676	0
Future Vol, veh/h	0	2	13	5	3	26	55	718	4	22	676	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	718	4	22	676	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1567	1554	677	1559	1552	722	677	0	0	723	0	0
Stage 1	721	721	-	831	831	-	-	-	-	-	-	-
Stage 2	846	833	-	728	721	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	91	114	456	92	115	430	924	-	-	889	-	-
Stage 1	422	435	-	367	387	-	-	-	-	-	-	-
Stage 2	360	386	-	418	435	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	78	104	456	82	105	429	923	-	-	888	-	-
Mov Cap-2 Maneuver	78	104	-	82	105	-	-	-	-	-	-	-
Stage 1	397	424	-	345	363	-	-	-	-	-	-	-
Stage 2	315	362	-	394	424	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	23.7	0.6	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	923	-	-	314	226	888	-	-
HCM Lane V/C Ratio	0.06	-	-	0.048	0.15	0.025	-	-
HCM Control Delay (s)	9.1	-	-	17	23.7	9.2	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	14	0	0	15	39	763	4	16	674	2
Future Vol, veh/h	1	0	14	0	0	15	39	763	4	16	674	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	763	4	16	674	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1559	1554	676	1558	1553	766	677	0	0	768	0	0
Stage 1	708	708	-	844	844	-	-	-	-	-	-	-
Stage 2	851	846	-	714	709	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	92	114	457	89	110	395	924	-	-	855	-	-
Stage 1	429	441	-	351	372	-	-	-	-	-	-	-
Stage 2	358	381	-	414	430	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	84	107	457	82	103	395	923	-	-	854	-	-
Mov Cap-2 Maneuver	84	107	-	82	103	-	-	-	-	-	-	-
Stage 1	411	432	-	336	356	-	-	-	-	-	-	-
Stage 2	330	365	-	394	421	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	14.5	0.4	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	923	-	-	353	395	854	-	-
HCM Lane V/C Ratio	0.042	-	-	0.042	0.038	0.019	-	-
HCM Control Delay (s)	9.1	-	-	15.7	14.5	9.3	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	1	2	0	127	10	678	3	60	631	1
Future Vol, veh/h	0	0	1	2	0	127	10	678	3	60	631	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	0	0	1	2	0	127	10	678	3	60	631	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1516	1455	633	1453	1454	681	633	0	0	682	0	0
Stage 1	753	753	-	701	701	-	-	-	-	-	-	-
Stage 2	763	702	-	752	753	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	99	131	483	109	131	452	960	-	-	897	-	-
Stage 1	405	420	-	431	442	-	-	-	-	-	-	-
Stage 2	400	443	-	404	419	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	67	121	483	102	121	452	959	-	-	896	-	-
Mov Cap-2 Maneuver	67	121	-	102	121	-	-	-	-	-	-	-
Stage 1	401	391	-	426	437	-	-	-	-	-	-	-
Stage 2	285	438	-	376	391	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	17	0.1	0.8
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	959	-	-	483	429	896	-	-
HCM Lane V/C Ratio	0.01	-	-	0.002	0.301	0.067	-	-
HCM Control Delay (s)	8.8	-	-	12.5	17	9.3	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.2	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	3	37	24	82	24	67	2	621	33	21	612	3
Future Volume (vph)	3	37	24	82	24	67	2	621	33	21	612	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.95		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1666			1701		1805	1746		1570	1726	
Flt Permitted		0.99			0.82		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1650			1422		1805	1746		1570	1726	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	37	24	82	24	67	2	621	33	21	612	3
RTOR Reduction (vph)	0	14	0	0	17	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	50	0	0	156	0	2	652	0	21	615	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		38.1			18.1		1.3	69.2		12.1	57.2	
Effective Green, g (s)		38.1			18.1		1.3	69.2		12.1	57.2	
Actuated g/C Ratio		0.27			0.13		0.01	0.49		0.09	0.41	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		449			183		16	863		135	705	
v/s Ratio Prot							c0.00	c0.37		0.01	c0.36	
v/s Ratio Perm		c0.03			c0.11							
v/c Ratio		0.11			0.85		0.12	0.76		0.16	0.87	
Uniform Delay, d1		38.2			59.7		68.8	28.6		59.2	38.0	
Progression Factor		1.00			1.00		1.00	1.00		0.61	0.27	
Incremental Delay, d2		0.0			29.2		3.5	6.1		0.4	11.6	
Delay (s)		38.3			88.9		72.3	34.7		36.3	21.9	
Level of Service		D			F		E	C		D	C	
Approach Delay (s)		38.3			88.9			34.8			22.4	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↱			↰
Traffic Vol, veh/h	2	0	660	287	0	717
Future Vol, veh/h	2	0	660	287	0	717
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	660	287	0	717

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1521	804	0	0	947	0
Stage 1	804	-	-	-	-	-
Stage 2	717	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	128	377	-	-	733	-
Stage 1	434	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	128	377	-	-	733	-
Mov Cap-2 Maneuver	128	-	-	-	-	-
Stage 1	434	-	-	-	-	-
Stage 2	476	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	128	733	-
HCM Lane V/C Ratio	-	-	0.016	-	-
HCM Control Delay (s)	-	-	33.6	0	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

HCM Signalized Intersection Capacity Analysis
1: SR 65 & First Street

Timing Plan: 40 CUM + BYPASS PM
11/04/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	45	4	68	3	1	17	38	734	1	8	727	12
Future Volume (vph)	45	4	68	3	1	17	38	734	1	8	727	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1656			1551		1752	1826		1805	1822	
Flt Permitted		0.86			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1460			1493		1752	1826		1805	1822	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	4	68	3	1	17	38	734	1	8	727	12
RTOR Reduction (vph)	0	38	0	0	13	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	79	0	0	8	0	38	735	0	8	738	0
Confl. Peds. (#/hr)	5					5			2	2		
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	3%	4%	4%	0%	4%	4%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		12.6			29.3		17.1	65.5		1.3	66.5	
Effective Green, g (s)		12.6			29.3		17.1	65.5		1.3	66.5	
Actuated g/C Ratio		0.09			0.21		0.12	0.47		0.01	0.48	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		131			312		213	854		16	865	
v/s Ratio Prot							0.02	c0.40		c0.00	c0.41	
v/s Ratio Perm		c0.05			c0.01							
v/c Ratio		0.60			0.02		0.18	0.86		0.50	0.85	
Uniform Delay, d1		61.3			44.0		55.1	33.2		69.0	32.5	
Progression Factor		1.00			1.00		0.98	0.84		1.00	1.00	
Incremental Delay, d2		7.6			0.0		0.1	9.8		8.7	10.5	
Delay (s)		68.8			44.0		54.3	37.5		77.7	42.9	
Level of Service		E			D		D	D		E	D	
Approach Delay (s)		68.8			44.0			38.4			43.3	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	21	31	756	7	24	772	0
Future Vol, veh/h	1	0	5	2	0	21	31	756	7	24	772	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	4	4	4	3	4	4	0	4	4
Mvmt Flow	1	0	5	2	0	21	31	756	7	24	772	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1652	1645	772	1645	1642	760	772	0	0	763	0	0
Stage 1	820	820	-	822	822	-	-	-	-	-	-	-
Stage 2	832	825	-	823	820	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.14	6.54	6.24	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.536	4.036	3.336	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	79	101	403	79	99	403	839	-	-	859	-	-
Stage 1	372	392	-	365	385	-	-	-	-	-	-	-
Stage 2	366	390	-	365	386	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	71	95	403	74	93	403	839	-	-	859	-	-
Mov Cap-2 Maneuver	71	95	-	74	93	-	-	-	-	-	-	-
Stage 1	358	381	-	351	371	-	-	-	-	-	-	-
Stage 2	334	376	-	350	375	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.4	18.4	0.4	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	839	-	-	226	291	859	-	-
HCM Lane V/C Ratio	0.037	-	-	0.027	0.079	0.028	-	-
HCM Control Delay (s)	9.5	-	-	21.4	18.4	9.3	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	23	13	772	2	22	752	4
Future Vol, veh/h	0	0	8	1	0	23	13	772	2	22	752	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	9	9	9	0	4	4	10	4	4
Mvmt Flow	0	0	8	1	0	23	13	772	2	22	752	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1609	1598	754	1601	1599	773	756	0	0	774	0	0
Stage 1	798	798	-	799	799	-	-	-	-	-	-	-
Stage 2	811	800	-	802	800	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.19	6.59	6.29	4.1	-	-	4.2	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.581	4.081	3.381	2.2	-	-	2.29	-	-
Pot Cap-1 Maneuver	85	107	412	82	102	388	864	-	-	807	-	-
Stage 1	382	401	-	369	388	-	-	-	-	-	-	-
Stage 2	376	400	-	367	387	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	103	412	78	98	388	864	-	-	807	-	-
Mov Cap-2 Maneuver	77	103	-	78	98	-	-	-	-	-	-	-
Stage 1	376	390	-	363	382	-	-	-	-	-	-	-
Stage 2	348	394	-	350	377	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	16.6	0.2	0.3
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	864	-	-	412	333	807	-	-
HCM Lane V/C Ratio	0.015	-	-	0.019	0.072	0.027	-	-
HCM Control Delay (s)	9.2	-	-	13.9	16.6	9.6	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	0	4	0	91	8	693	1	67	688	6
Future Vol, veh/h	1	0	0	4	0	91	8	693	1	67	688	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	4	4	2	4	4
Mvmt Flow	1	0	0	4	0	91	8	693	1	67	688	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1580	1535	691	1535	1538	694	694	0	0	694	0	0
Stage 1	825	825	-	710	710	-	-	-	-	-	-	-
Stage 2	755	710	-	825	828	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	89	117	448	96	117	446	911	-	-	901	-	-
Stage 1	370	390	-	428	440	-	-	-	-	-	-	-
Stage 2	404	440	-	370	389	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	66	107	448	90	107	446	911	-	-	901	-	-
Mov Cap-2 Maneuver	66	107	-	90	107	-	-	-	-	-	-	-
Stage 1	367	361	-	424	436	-	-	-	-	-	-	-
Stage 2	319	436	-	342	360	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	60.4	17.5	0.1	0.8
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	911	-	-	66	382	901	-	-
HCM Lane V/C Ratio	0.009	-	-	0.015	0.249	0.074	-	-
HCM Control Delay (s)	9	-	-	60.4	17.5	9.3	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	38	28	25	209	12	54	24	597	3	48	595	34
Future Volume (vph)	38	28	25	209	12	54	24	597	3	48	595	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.96			0.97		1.00	1.00		1.00	0.99	
Flt Protected		0.98			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1774			1730		1805	1808		1656	1812	
Flt Permitted		0.91			0.72		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1647			1290		1805	1808		1656	1812	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	28	25	209	12	54	24	597	3	48	595	34
RTOR Reduction (vph)	0	8	0	0	6	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	83	0	0	269	0	24	600	0	48	627	0
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	0%	5%	5%	9%	4%	4%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		41.7			20.4		5.1	61.4		18.6	57.7	
Effective Green, g (s)		41.7			20.4		5.1	61.4		18.6	57.7	
Actuated g/C Ratio		0.30			0.15		0.04	0.44		0.13	0.41	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		490			187		65	792		220	746	
v/s Ratio Prot							c0.01	c0.33		0.03	c0.35	
v/s Ratio Perm		c0.05			c0.21							
v/c Ratio		0.17			1.44		0.37	0.76		0.22	0.84	
Uniform Delay, d1		36.3			59.8		65.9	33.0		54.2	37.0	
Progression Factor		1.00			1.00		1.00	1.00		0.58	0.43	
Incremental Delay, d2		0.1			225.1		3.5	6.7		0.3	7.9	
Delay (s)		36.4			284.9		69.4	39.7		32.0	23.9	
Level of Service		D			F		E	D		C	C	
Approach Delay (s)		36.4			284.9			40.9			24.5	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	74.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	14	0	653	125	1	793
Future Vol, veh/h	14	0	653	125	1	793
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	4	4	3	3
Mvmt Flow	14	0	653	125	1	793

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1511	716	0	0	778	0
Stage 1	716	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.227	-
Pot Cap-1 Maneuver	134	434	-	-	834	-
Stage 1	488	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	134	434	-	-	834	-
Mov Cap-2 Maneuver	134	-	-	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	35	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	134	834	-
HCM Lane V/C Ratio	-	-	0.104	0.001	-
HCM Control Delay (s)	-	-	35	9.3	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Appendix K: 2040 Cumulative Conditions with the SR 65 Realignment plus Project Capacity Analysis Worksheets

HCM Signalized Intersection Capacity Analysis Timing Plan: 40 CUM + BYPASS + PROJ AM
1: SR 65 & First Street
11/04/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	142	6	78	2	9	5	140	760	0	3	648	24
Future Volume (vph)	142	6	78	2	9	5	140	760	0	3	648	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1682		1770	1743		1805	1750	
Flt Permitted		0.80			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1389			1657		1770	1743		1805	1750	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	142	6	78	2	9	5	140	760	0	3	648	24
RTOR Reduction (vph)	0	14	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	212	0	0	12	0	140	760	0	3	671	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.4			34.0		27.7	69.6		1.1	60.0	
Effective Green, g (s)		21.4			34.0		27.7	69.6		1.1	60.0	
Actuated g/C Ratio		0.15			0.24		0.20	0.50		0.01	0.43	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		212			402		350	866		14	750	
v/s Ratio Prot							0.08	c0.44		c0.00	c0.38	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		1.00			0.03		0.40	0.88		0.21	0.89	
Uniform Delay, d1		59.3			40.4		48.9	31.4		69.0	37.1	
Progression Factor		1.00			1.00		0.82	0.61		1.00	1.00	
Incremental Delay, d2		62.4			0.0		0.2	9.0		2.8	15.4	
Delay (s)		121.7			40.4		40.3	28.1		71.8	52.4	
Level of Service		F			D		D	C		E	D	
Approach Delay (s)		121.7			40.4			30.0			52.5	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	49.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	13	5	3	26	55	895	4	22	746	0
Future Vol, veh/h	0	2	13	5	3	26	55	895	4	22	746	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	895	4	22	746	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1814	1801	747	1806	1799	899	747	0	0	900	0	0
Stage 1	791	791	-	1008	1008	-	-	-	-	-	-	-
Stage 2	1023	1010	-	798	791	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	61	81	416	62	81	340	870	-	-	763	-	-
Stage 1	386	404	-	292	321	-	-	-	-	-	-	-
Stage 2	287	320	-	382	404	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	74	416	55	74	339	869	-	-	762	-	-
Mov Cap-2 Maneuver	51	74	-	55	74	-	-	-	-	-	-	-
Stage 1	361	392	-	273	300	-	-	-	-	-	-	-
Stage 2	246	300	-	358	392	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	32.8	0.5	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	869	-	-	257	163	762	-	-
HCM Lane V/C Ratio	0.063	-	-	0.058	0.209	0.029	-	-
HCM Control Delay (s)	9.4	-	-	19.9	32.8	9.9	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	14	0	0	15	39	940	4	16	744	2
Future Vol, veh/h	1	0	14	0	0	15	39	940	4	16	744	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	940	4	16	744	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1806	1801	746	1805	1800	943	747	0	0	945	0	0
Stage 1	778	778	-	1021	1021	-	-	-	-	-	-	-
Stage 2	1028	1023	-	784	779	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	62	81	417	60	78	312	870	-	-	734	-	-
Stage 1	392	410	-	279	308	-	-	-	-	-	-	-
Stage 2	285	316	-	379	399	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	56	75	417	55	73	312	869	-	-	733	-	-
Mov Cap-2 Maneuver	56	75	-	55	73	-	-	-	-	-	-	-
Stage 1	374	401	-	266	294	-	-	-	-	-	-	-
Stage 2	259	301	-	358	390	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	17.1	0.4	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	869	-	-	292	312	733	-	-
HCM Lane V/C Ratio	0.045	-	-	0.051	0.048	0.022	-	-
HCM Control Delay (s)	9.3	-	-	18	17.1	10	-	-
HCM Lane LOS	A	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	1	2	0	127	10	855	3	60	701	1
Future Vol, veh/h	0	0	1	2	0	127	10	855	3	60	701	1
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	0	0	1	2	0	127	10	855	3	60	701	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1763	1702	703	1700	1701	858	703	0	0	859	0	0
Stage 1	823	823	-	878	878	-	-	-	-	-	-	-
Stage 2	940	879	-	822	823	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	66	93	441	73	92	358	904	-	-	769	-	-
Stage 1	371	391	-	344	367	-	-	-	-	-	-	-
Stage 2	319	368	-	370	389	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	40	85	441	68	84	358	903	-	-	768	-	-
Mov Cap-2 Maneuver	40	85	-	68	84	-	-	-	-	-	-	-
Stage 1	367	360	-	340	363	-	-	-	-	-	-	-
Stage 2	204	364	-	340	358	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	22.2	0.1	0.8
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	903	-	-	441	336	768	-	-
HCM Lane V/C Ratio	0.011	-	-	0.002	0.384	0.078	-	-
HCM Control Delay (s)	9	-	-	13.2	22.2	10.1	-	-
HCM Lane LOS	A	-	-	B	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.8	0.3	-	-

HCM Signalized Intersection Capacity Analysis Timing Plan: 40 CUM + BYPASS + PROJ AM
5: SR 65 & Main Street
11/04/2023

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	3	37	29	93	24	67	18	798	49	21	682	3
Future Volume (vph)	3	37	29	93	24	67	18	798	49	21	682	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.95		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1656			1705		1805	1744		1570	1726	
Flt Permitted		0.99			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1642			1407		1805	1744		1570	1726	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	37	29	93	24	67	18	798	49	21	682	3
RTOR Reduction (vph)	0	17	0	0	15	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	52	0	0	169	0	18	845	0	21	685	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		35.2			18.9		3.3	77.4		7.6	61.9	
Effective Green, g (s)		35.2			18.9		3.3	77.4		7.6	61.9	
Actuated g/C Ratio		0.25			0.13		0.02	0.55		0.05	0.44	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		412			189		42	964		85	763	
v/s Ratio Prot							c0.01	c0.48		0.01	c0.40	
v/s Ratio Perm		c0.03			c0.12							
v/c Ratio		0.13			0.90		0.43	0.88		0.25	0.90	
Uniform Delay, d1		40.5			59.6		67.4	27.2		63.5	36.1	
Progression Factor		1.00			1.00		1.00	1.00		0.60	0.28	
Incremental Delay, d2		0.1			36.8		6.9	11.1		1.1	12.1	
Delay (s)		40.6			96.4		74.3	38.2		39.4	22.1	
Level of Service		D			F		E	D		D	C	
Approach Delay (s)		40.6			96.4			39.0			22.6	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↱		↑↱			↰↑
Traffic Vol, veh/h	2	0	869	287	0	803
Future Vol, veh/h	2	0	869	287	0	803
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	869	287	0	803

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1816	1013	0	0	1156	0
Stage 1	1013	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	84	285	-	-	612	-
Stage 1	345	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	84	285	-	-	612	-
Mov Cap-2 Maneuver	84	-	-	-	-	-
Stage 1	345	-	-	-	-	-
Stage 2	434	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	84	612	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	48.9	0	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Vol, veh/h	105	56	11	946	717	43
Future Vol, veh/h	105	56	11	946	717	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	300
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	56	11	946	717	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1685	717	760	0	-	0
Stage 1	717	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 103	430	852	-	-	-
Stage 1	484	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 100	430	852	-	-	-
Mov Cap-2 Maneuver	~ 100	-	-	-	-	-
Stage 1	471	-	-	-	-	-
Stage 2	368	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	124.6	0.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	852	-	100	430	-	-
HCM Lane V/C Ratio	0.013	-	1.05	0.13	-	-
HCM Control Delay (s)	9.3	0	183.2	14.6	-	-
HCM Lane LOS	A	A	F	B	-	-
HCM 95th %tile Q(veh)	0	-	6.6	0.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Vol, veh/h	105	56	11	946	773	43
Future Vol, veh/h	105	56	11	946	773	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	300
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	56	11	946	773	43

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1741	773	816	0	-	0
Stage 1	773	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 95	399	812	-	-	-
Stage 1	455	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 94	399	812	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	368	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	21.6		0.1		0	
HCM LOS	C					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	812	-	284	399	-	-
HCM Lane V/C Ratio	0.014	-	0.37	0.14	-	-
HCM Control Delay (s)	9.5	-	24.9	15.5	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0	-	1.6	0.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	45	4	106	3	1	17	60	790	1	8	823	12
Future Volume (vph)	45	4	106	3	1	17	60	790	1	8	823	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.96		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1628			1525		1770	1743		1805	1755	
Flt Permitted		0.89			0.93		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1477			1432		1770	1743		1805	1755	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	4	106	3	1	17	60	790	1	8	823	12
RTOR Reduction (vph)	0	59	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	7	0	60	791	0	8	835	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		13.9			27.3		15.2	68.8		1.3	71.7	
Effective Green, g (s)		13.9			27.3		15.2	68.8		1.3	71.7	
Actuated g/C Ratio		0.10			0.20		0.11	0.49		0.01	0.51	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		146			279		192	856		16	898	
v/s Ratio Prot							0.03	c0.45		c0.00	c0.48	
v/s Ratio Perm		c0.06			c0.01							
v/c Ratio		0.65			0.03		0.31	0.92		0.50	0.93	
Uniform Delay, d1		60.7			45.6		57.6	33.2		69.0	31.8	
Progression Factor		1.00			1.00		0.92	0.78		1.00	1.00	
Incremental Delay, d2		10.1			0.0		0.3	13.9		8.7	17.1	
Delay (s)		70.8			45.6		53.0	39.9		77.7	48.9	
Level of Service		E			D		D	D		E	D	
Approach Delay (s)		70.8			45.6			40.8			49.2	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2: SR 65 & 2nd Street

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	21	31	834	7	24	906	0
Future Vol, veh/h	1	0	5	2	0	21	31	834	7	24	906	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	1	0	5	2	0	21	31	834	7	24	906	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1866	1859	907	1858	1856	840	907	0	0	842	0	0
Stage 1	955	955	-	901	901	-	-	-	-	-	-	-
Stage 2	911	904	-	957	955	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	56	74	337	57	75	368	759	-	-	802	-	-
Stage 1	313	339	-	335	360	-	-	-	-	-	-	-
Stage 2	331	358	-	312	339	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	50	69	337	53	70	367	758	-	-	801	-	-
Mov Cap-2 Maneuver	50	69	-	53	70	-	-	-	-	-	-	-
Stage 1	300	328	-	321	345	-	-	-	-	-	-	-
Stage 2	299	343	-	298	328	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	26.7			21.4			0.4			0.2		
HCM LOS	D			C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	758	-	-	172	242	801	-	-
HCM Lane V/C Ratio	0.041	-	-	0.035	0.095	0.03	-	-
HCM Control Delay (s)	10	-	-	26.7	21.4	9.6	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	23	13	850	2	22	886	4
Future Vol, veh/h	0	0	8	1	0	23	13	850	2	22	886	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	0	0	8	1	0	23	13	850	2	22	886	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1822	1812	889	1814	1813	852	891	0	0	853	0	0
Stage 1	933	933	-	878	878	-	-	-	-	-	-	-
Stage 2	889	879	-	936	935	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	60	79	345	59	76	352	769	-	-	795	-	-
Stage 1	322	348	-	336	359	-	-	-	-	-	-	-
Stage 2	341	368	-	312	338	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	75	345	56	73	352	768	-	-	794	-	-
Mov Cap-2 Maneuver	54	75	-	56	73	-	-	-	-	-	-	-
Stage 1	316	338	-	330	353	-	-	-	-	-	-	-
Stage 2	313	361	-	296	328	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	18.6	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	768	-	-	345	288	794	-	-
HCM Lane V/C Ratio	0.017	-	-	0.023	0.083	0.028	-	-
HCM Control Delay (s)	9.8	-	-	15.7	18.6	9.7	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	0	4	0	91	8	771	1	67	822	6
Future Vol, veh/h	1	0	0	4	0	91	8	771	1	67	822	6
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	1	1	1	0	8	8	5	10	10
Mvmt Flow	1	0	0	4	0	91	8	771	1	67	822	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1793	1749	826	1748	1752	773	829	0	0	773	0	0
Stage 1	960	960	-	789	789	-	-	-	-	-	-	-
Stage 2	833	789	-	959	963	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.11	6.51	6.21	4.1	-	-	4.15	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.509	4.009	3.309	2.2	-	-	2.245	-	-
Pot Cap-1 Maneuver	63	87	375	68	86	401	811	-	-	829	-	-
Stage 1	311	338	-	385	403	-	-	-	-	-	-	-
Stage 2	366	405	-	310	335	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	45	79	375	63	78	401	810	-	-	828	-	-
Mov Cap-2 Maneuver	45	79	-	63	78	-	-	-	-	-	-	-
Stage 1	308	310	-	381	399	-	-	-	-	-	-	-
Stage 2	280	401	-	285	308	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	86.8	20.5	0.1	0.7
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	810	-	-	45	327	828	-	-
HCM Lane V/C Ratio	0.01	-	-	0.022	0.291	0.081	-	-
HCM Control Delay (s)	9.5	-	-	86.8	20.5	9.7	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.2	0.3	-	-

5: SR 65 & Main Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	38	28	63	266	12	54	46	675	37	48	729	34
Future Volume (vph)	38	28	63	266	12	54	46	675	37	48	729	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1619			1742		1805	1746		1570	1716	
Flt Permitted		0.94			0.68		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1552			1239		1805	1746		1570	1716	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	28	63	266	12	54	46	675	37	48	729	34
RTOR Reduction (vph)	0	23	0	0	5	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	106	0	0	327	0	46	711	0	48	761	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		30.5			20.4		7.8	73.4		17.8	69.9	
Effective Green, g (s)		30.5			20.4		7.8	73.4		17.8	69.9	
Actuated g/C Ratio		0.22			0.15		0.06	0.52		0.13	0.50	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		338			180		100	915		199	856	
v/s Ratio Prot							c0.03	c0.41		0.03	c0.44	
v/s Ratio Perm		c0.07			c0.26							
v/c Ratio		0.31			1.82		0.46	0.78		0.24	0.89	
Uniform Delay, d1		45.9			59.8		64.1	26.7		55.0	31.6	
Progression Factor		1.00			1.00		1.00	1.00		0.63	0.38	
Incremental Delay, d2		0.2			388.2		3.3	6.4		0.3	8.0	
Delay (s)		46.1			448.0		67.4	33.1		34.8	20.0	
Level of Service		D			F		E	C		C	C	
Approach Delay (s)		46.1			448.0			35.2			20.9	
Approach LOS		D			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	97.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	14	0	787	125	1	1022
Future Vol, veh/h	14	0	787	125	1	1022
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	14	0	787	125	1	1022

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1874	850	0	0	912	0
Stage 1	850	-	-	-	-	-
Stage 2	1024	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	77	354	-	-	755	-
Stage 1	412	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	77	354	-	-	755	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	340	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	77	755	-
HCM Lane V/C Ratio	-	-	0.182	0.001	-
HCM Control Delay (s)	-	-	61.9	9.8	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection						
Int Delay, s/veh	6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Vol, veh/h	67	45	76	777	793	115
Future Vol, veh/h	67	45	76	777	793	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	300
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	45	76	777	793	115

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1722	793	908	0	-	0
Stage 1	793	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	98	389	750	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	389	750	-	-	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	367	-	-	-	-	-
Stage 2	385	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	92.9		0.9		0	
HCM LOS	F					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	750	-	81	389	-	-
HCM Lane V/C Ratio	0.101	-	0.827	0.116	-	-
HCM Control Delay (s)	10.3	0	144.9	15.5	-	-
HCM Lane LOS	B	A	F	C	-	-
HCM 95th %tile Q(veh)	0.3	-	4.2	0.4	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Vol, veh/h	67	45	76	777	838	115
Future Vol, veh/h	67	45	76	777	838	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	300	-	-	300
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	67	45	76	777	838	115

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1767	838	953	0	-	0
Stage 1	838	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	92	366	721	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	385	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	82	366	721	-	-	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	379	-	-	-	-	-
Stage 2	385	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	20.2		0.9		0	
HCM LOS	C					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	721	-	268	366	-	-
HCM Lane V/C Ratio	0.105	-	0.25	0.123	-	-
HCM Control Delay (s)	10.6	-	22.9	16.2	-	-
HCM Lane LOS	B	-	C	C	-	-
HCM 95th %tile Q(veh)	0.4	-	1	0.4	-	-

Appendix L: 2040 Cumulative Conditions with the SR 65 Realignment plus Project with Mitigations Capacity Analysis Worksheets

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	142	6	78	2	9	5	140	760	0	3	648	24
Future Volume (vph)	142	6	78	2	9	5	140	760	0	3	648	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1684			1682		1770	1743		1805	1750	
Flt Permitted		0.80			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1389			1657		1770	1743		1805	1750	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	142	6	78	2	9	5	140	760	0	3	648	24
RTOR Reduction (vph)	0	14	0	0	4	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	212	0	0	12	0	140	760	0	3	671	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		21.4			34.0		27.7	69.6		1.1	60.0	
Effective Green, g (s)		21.4			34.0		27.7	69.6		1.1	60.0	
Actuated g/C Ratio		0.15			0.24		0.20	0.50		0.01	0.43	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		212			402		350	866		14	750	
v/s Ratio Prot							0.08	c0.44		c0.00	c0.38	
v/s Ratio Perm		c0.15			c0.01							
v/c Ratio		1.00			0.03		0.40	0.88		0.21	0.89	
Uniform Delay, d1		59.3			40.4		48.9	31.4		69.0	37.1	
Progression Factor		1.00			1.00		0.68	0.38		1.00	1.00	
Incremental Delay, d2		62.4			0.0		0.2	10.5		2.8	15.4	
Delay (s)		121.7			40.4		33.3	22.4		71.8	52.4	
Level of Service		F			D		C	C		E	D	
Approach Delay (s)		121.7			40.4			24.1			52.5	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	47.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Vol, veh/h	0	2	13	5	3	26	55	895	4	22	746	0
Future Vol, veh/h	0	2	13	5	3	26	55	895	4	22	746	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	0	2	13	5	3	26	55	895	4	22	746	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1814	1801	747	1806	1799	899	747	0	0	900	0	0
Stage 1	791	791	-	1008	1008	-	-	-	-	-	-	-
Stage 2	1023	1010	-	798	791	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	61	81	416	62	81	340	870	-	-	763	-	-
Stage 1	386	404	-	292	321	-	-	-	-	-	-	-
Stage 2	287	320	-	382	404	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	74	416	55	74	339	869	-	-	762	-	-
Mov Cap-2 Maneuver	51	74	-	55	74	-	-	-	-	-	-	-
Stage 1	361	392	-	273	300	-	-	-	-	-	-	-
Stage 2	246	300	-	358	392	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	32.8	0.5	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	869	-	-	257	163	762	-	-
HCM Lane V/C Ratio	0.063	-	-	0.058	0.209	0.029	-	-
HCM Control Delay (s)	9.4	-	-	19.9	32.8	9.9	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.8	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	14	0	0	15	39	940	4	16	744	2
Future Vol, veh/h	1	0	14	0	0	15	39	940	4	16	744	2
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	1	0	14	0	0	15	39	940	4	16	744	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1806	1801	746	1805	1800	943	747	0	0	945	0	0
Stage 1	778	778	-	1021	1021	-	-	-	-	-	-	-
Stage 2	1028	1023	-	784	779	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	62	81	417	60	78	312	870	-	-	734	-	-
Stage 1	392	410	-	279	308	-	-	-	-	-	-	-
Stage 2	285	316	-	379	399	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	56	75	417	55	73	312	869	-	-	733	-	-
Mov Cap-2 Maneuver	56	75	-	55	73	-	-	-	-	-	-	-
Stage 1	374	401	-	266	294	-	-	-	-	-	-	-
Stage 2	259	301	-	358	390	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	17.1	0.4	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	869	-	-	292	312	733	-	-
HCM Lane V/C Ratio	0.045	-	-	0.051	0.048	0.022	-	-
HCM Control Delay (s)	9.3	-	-	18	17.1	10	-	-
HCM Lane LOS	A	-	-	C	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.2	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	0	0	1	2	0	127	10	855	3	60	701	1
Future Volume (vph)	0	0	1	2	0	127	10	855	3	60	701	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.86			0.87		1.00	1.00		1.00	1.00	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644			1630		1805	1758		1719	1727	
Flt Permitted		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1644			1624		1805	1758		1719	1727	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	1	2	0	127	10	855	3	60	701	1
RTOR Reduction (vph)	0	1	0	0	120	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	9	0	10	858	0	60	702	0
Confl. Peds. (#/hr)							1		1	1		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	8%	8%	5%	10%	10%
Turn Type		NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		7.5			7.5		1.6	110.0		9.0	117.4	
Effective Green, g (s)		7.5			7.5		1.6	110.0		9.0	117.4	
Actuated g/C Ratio		0.05			0.05		0.01	0.79		0.06	0.84	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		88			87		20	1381		110	1448	
v/s Ratio Prot		0.00					0.01	c0.49		c0.03	0.41	
v/s Ratio Perm					c0.01							
v/c Ratio		0.00			0.10		0.50	0.62		0.55	0.48	
Uniform Delay, d1		62.7			63.0		68.8	6.3		63.5	3.1	
Progression Factor		1.00			1.00		1.24	0.27		1.28	0.12	
Incremental Delay, d2		0.0			0.5		11.8	1.3		4.0	0.9	
Delay (s)		62.7			63.6		97.1	3.0		85.0	1.2	
Level of Service		E			E		F	A		F	A	
Approach Delay (s)		62.7			63.6			4.1			7.8	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	3	37	29	93	24	67	18	798	49	21	682	3
Future Volume (vph)	3	37	29	93	24	67	18	798	49	21	682	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.95		1.00	0.99		1.00	1.00	
Flt Protected		1.00			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1656			1706		1805	1744		1570	1726	
Flt Permitted		0.99			0.80		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1644			1407		1805	1744		1570	1726	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	3	37	29	93	24	67	18	798	49	21	682	3
RTOR Reduction (vph)	0	18	0	0	15	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	51	0	0	169	0	18	845	0	21	685	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		32.6			20.1		2.7	79.3		4.5	75.3	
Effective Green, g (s)		32.6			20.1		2.7	79.3		4.5	75.3	
Actuated g/C Ratio		0.23			0.14		0.02	0.57		0.03	0.54	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		382			202		34	987		50	928	
v/s Ratio Prot							c0.01	c0.48		0.01	c0.40	
v/s Ratio Perm		c0.03			c0.12							
v/c Ratio		0.13			0.83		0.53	0.86		0.42	0.74	
Uniform Delay, d1		42.5			58.3		68.0	25.6		66.5	24.8	
Progression Factor		1.00			1.00		1.02	0.74		0.72	0.13	
Incremental Delay, d2		0.1			23.7		12.0	8.2		5.1	4.7	
Delay (s)		42.6			82.0		81.1	27.2		53.1	8.0	
Level of Service		D			F		F	C		D	A	
Approach Delay (s)		42.6			82.0			28.3			9.3	
Approach LOS		D			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	2	0	869	287	0	803
Future Vol, veh/h	2	0	869	287	0	803
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	2	0	869	287	0	803

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1816	1013	0	0	1156	0
Stage 1	1013	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	84	285	-	-	612	-
Stage 1	345	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	84	285	-	-	612	-
Mov Cap-2 Maneuver	84	-	-	-	-	-
Stage 1	345	-	-	-	-	-
Stage 2	434	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.9	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	84	612	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	48.9	0	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Volume (vph)	105	56	11	946	717	43
Future Volume (vph)	105	56	11	946	717	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		1862	1863	1583
Flt Permitted	0.95	1.00		0.99	1.00	1.00
Satd. Flow (perm)	1770	1583		1846	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	56	11	946	717	43
RTOR Reduction (vph)	0	51	0	0	0	7
Lane Group Flow (vph)	105	5	0	957	717	36
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	13.6	13.6		117.4	117.4	117.4
Effective Green, g (s)	13.6	13.6		117.4	117.4	117.4
Actuated g/C Ratio	0.10	0.10		0.84	0.84	0.84
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	171	153		1548	1562	1327
v/s Ratio Prot	c0.06				0.38	
v/s Ratio Perm		0.00		c0.52		0.02
v/c Ratio	0.61	0.04		0.62	0.46	0.03
Uniform Delay, d1	60.7	57.3		3.8	3.0	1.9
Progression Factor	1.00	1.00		0.70	0.44	0.32
Incremental Delay, d2	6.4	0.1		1.5	0.8	0.0
Delay (s)	67.1	57.4		4.2	2.1	0.6
Level of Service	E	E		A	A	A
Approach Delay (s)	63.7			4.2	2.0	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Volume (vph)	105	56	11	946	773	43
Future Volume (vph)	105	56	11	946	773	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	56	11	946	773	43
RTOR Reduction (vph)	0	51	0	0	0	9
Lane Group Flow (vph)	105	5	11	946	773	34
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	13.6	13.6	3.0	117.4	109.9	109.9
Effective Green, g (s)	13.6	13.6	3.0	117.4	109.9	109.9
Actuated g/C Ratio	0.10	0.10	0.02	0.84	0.79	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	171	153	37	1562	1462	1242
v/s Ratio Prot	c0.06		0.01	c0.51	0.41	
v/s Ratio Perm		0.00				0.02
v/c Ratio	0.61	0.04	0.30	0.61	0.53	0.03
Uniform Delay, d1	60.7	57.3	67.5	3.7	5.5	3.3
Progression Factor	1.00	1.00	1.00	1.00	0.86	1.52
Incremental Delay, d2	6.4	0.1	4.5	1.8	1.3	0.0
Delay (s)	67.1	57.4	71.9	5.5	6.0	5.1
Level of Service	E	E	E	A	A	A
Approach Delay (s)	63.7			6.2	6.0	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Volume (vph)	45	4	106	3	1	17	60	790	1	8	823	12
Future Volume (vph)	45	4	106	3	1	17	60	790	1	8	823	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.98			0.96		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Frt		0.91			0.89		1.00	1.00		1.00	1.00	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1628			1525		1770	1743		1805	1755	
Flt Permitted		0.89			0.93		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1477			1432		1770	1743		1805	1755	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	4	106	3	1	17	60	790	1	8	823	12
RTOR Reduction (vph)	0	59	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	7	0	60	791	0	8	835	0
Confl. Peds. (#/hr)	6		1	1		6			2	2		
Confl. Bikes (#/hr)						3						
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	9%	9%	0%	8%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		13.9			27.3		15.2	68.8		1.3	71.7	
Effective Green, g (s)		13.9			27.3		15.2	68.8		1.3	71.7	
Actuated g/C Ratio		0.10			0.20		0.11	0.49		0.01	0.51	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		3.0			2.0		2.0	3.0		2.0	3.0	
Lane Grp Cap (vph)		146			279		192	856		16	898	
v/s Ratio Prot							0.03	c0.45		c0.00	c0.48	
v/s Ratio Perm		c0.06			c0.01							
v/c Ratio		0.65			0.03		0.31	0.92		0.50	0.93	
Uniform Delay, d1		60.7			45.6		57.6	33.2		69.0	31.8	
Progression Factor		1.00			1.00		0.71	0.41		1.00	1.00	
Incremental Delay, d2		10.1			0.0		0.3	15.5		8.7	17.1	
Delay (s)		70.8			45.6		41.3	28.9		77.7	48.9	
Level of Service		E			D		D	C		E	D	
Approach Delay (s)		70.8			45.6			29.8			49.2	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

2: SR 65 & 2nd Street

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	1	0	5	2	0	21	31	834	7	24	906	0
Future Vol, veh/h	1	0	5	2	0	21	31	834	7	24	906	0
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	8	8	0	10	10
Mvmt Flow	1	0	5	2	0	21	31	834	7	24	906	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1866	1859	907	1858	1856	840	907	0	0	842	0	0
Stage 1	955	955	-	901	901	-	-	-	-	-	-	-
Stage 2	911	904	-	957	955	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	56	74	337	57	75	368	759	-	-	802	-	-
Stage 1	313	339	-	335	360	-	-	-	-	-	-	-
Stage 2	331	358	-	312	339	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	50	69	337	53	70	367	758	-	-	801	-	-
Mov Cap-2 Maneuver	50	69	-	53	70	-	-	-	-	-	-	-
Stage 1	300	328	-	321	345	-	-	-	-	-	-	-
Stage 2	299	343	-	298	328	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.7	21.4	0.4	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	758	-	-	172	242	801	-	-
HCM Lane V/C Ratio	0.041	-	-	0.035	0.095	0.03	-	-
HCM Control Delay (s)	10	-	-	26.7	21.4	9.6	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	8	1	0	23	13	850	2	22	886	4
Future Vol, veh/h	0	0	8	1	0	23	13	850	2	22	886	4
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	7	7	7	0	7	7	0	10	10
Mvmt Flow	0	0	8	1	0	23	13	850	2	22	886	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1822	1812	889	1814	1813	852	891	0	0	853	0	0
Stage 1	933	933	-	878	878	-	-	-	-	-	-	-
Stage 2	889	879	-	936	935	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.17	6.57	6.27	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.17	5.57	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.563	4.063	3.363	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	60	79	345	59	76	352	769	-	-	795	-	-
Stage 1	322	348	-	336	359	-	-	-	-	-	-	-
Stage 2	341	368	-	312	338	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	75	345	56	73	352	768	-	-	794	-	-
Mov Cap-2 Maneuver	54	75	-	56	73	-	-	-	-	-	-	-
Stage 1	316	338	-	330	353	-	-	-	-	-	-	-
Stage 2	313	361	-	296	328	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	18.6	0.1	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	768	-	-	345	288	794	-	-
HCM Lane V/C Ratio	0.017	-	-	0.023	0.083	0.028	-	-
HCM Control Delay (s)	9.8	-	-	15.7	18.6	9.7	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.3	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	1	0	0	4	0	91	8	771	1	67	822	6
Future Volume (vph)	1	0	0	4	0	91	8	771	1	67	822	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		1.00			0.87		1.00	1.00		1.00	1.00	
Flt Protected		0.95			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805			1634		1805	1759		1719	1725	
Flt Permitted		0.55			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1041			1616		1805	1759		1719	1725	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	0	4	0	91	8	771	1	67	822	6
RTOR Reduction (vph)	0	0	0	0	86	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	0	0	9	0	8	772	0	67	828	0
Confl. Peds. (#/hr)							1		1	1		1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	8%	8%	5%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		7.3			7.3		1.5	109.7		9.5	117.7	
Effective Green, g (s)		7.3			7.3		1.5	109.7		9.5	117.7	
Actuated g/C Ratio		0.05			0.05		0.01	0.78		0.07	0.84	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		54			84		19	1378		116	1450	
v/s Ratio Prot							0.00	0.44		c0.04	c0.48	
v/s Ratio Perm		0.00			c0.01							
v/c Ratio		0.02			0.10		0.42	0.56		0.58	0.57	
Uniform Delay, d1		63.0			63.2		68.8	5.8		63.3	3.4	
Progression Factor		1.00			1.00		1.26	0.24		1.17	0.06	
Incremental Delay, d2		0.1			0.5		8.8	1.0		3.8	0.9	
Delay (s)		63.1			63.8		95.6	2.4		77.7	1.1	
Level of Service		E			E		F	A		E	A	
Approach Delay (s)		63.1			63.8			3.4			6.8	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥		↰	↱		↰	↱	
Traffic Volume (vph)	38	28	63	266	12	54	46	675	37	48	729	34
Future Volume (vph)	38	28	63	266	12	54	46	675	37	48	729	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1619			1743		1805	1746		1570	1716	
Flt Permitted		0.88			0.68		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1454			1240		1805	1746		1570	1716	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	38	28	63	266	12	54	46	675	37	48	729	34
RTOR Reduction (vph)	0	24	0	0	5	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	105	0	0	327	0	46	710	0	48	762	0
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)						4						
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	0%	8%	8%	15%	10%	10%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								
Actuated Green, G (s)		46.0			39.3		5.0	66.1		7.5	67.0	
Effective Green, g (s)		46.0			39.3		5.0	66.1		7.5	67.0	
Actuated g/C Ratio		0.33			0.28		0.04	0.47		0.05	0.48	
Clearance Time (s)		4.6			4.6		4.6	5.1		4.6	5.1	
Vehicle Extension (s)		2.0			2.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		477			348		64	824		84	821	
v/s Ratio Prot							c0.03	c0.41		0.03	c0.44	
v/s Ratio Perm		c0.07			c0.26							
v/c Ratio		0.22			0.94		0.72	0.86		0.57	0.93	
Uniform Delay, d1		34.0			49.2		66.8	32.9		64.7	34.2	
Progression Factor		1.00			1.00		1.01	0.94		0.71	0.45	
Incremental Delay, d2		0.1			32.2		28.0	10.1		7.7	16.0	
Delay (s)		34.1			81.4		95.3	41.1		53.9	31.5	
Level of Service		C			F		F	D		D	C	
Approach Delay (s)		34.1			81.4			44.4			32.8	
Approach LOS		C			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↱			↰
Traffic Vol, veh/h	14	0	787	125	1	1022
Future Vol, veh/h	14	0	787	125	1	1022
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	6	6	8	8	0	0
Mvmt Flow	14	0	787	125	1	1022

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1874	850	0	0	912	0
Stage 1	850	-	-	-	-	-
Stage 2	1024	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.2	-
Pot Cap-1 Maneuver	77	354	-	-	755	-
Stage 1	412	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	77	354	-	-	755	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	412	-	-	-	-	-
Stage 2	340	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	77	755	-
HCM Lane V/C Ratio	-	-	0.182	0.001	-
HCM Control Delay (s)	-	-	61.9	9.8	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱		↰↑	↑	↱
Traffic Volume (vph)	67	45	76	777	793	115
Future Volume (vph)	67	45	76	777	793	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		1.00	1.00	1.00
Satd. Flow (prot)	1770	1583		1854	1863	1583
Flt Permitted	0.95	1.00		0.87	1.00	1.00
Satd. Flow (perm)	1770	1583		1616	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	67	45	76	777	793	115
RTOR Reduction (vph)	0	42	0	0	0	15
Lane Group Flow (vph)	67	3	0	853	793	100
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	9.4	9.4		121.6	121.6	121.6
Effective Green, g (s)	9.4	9.4		121.6	121.6	121.6
Actuated g/C Ratio	0.07	0.07		0.87	0.87	0.87
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	118	106		1403	1618	1374
v/s Ratio Prot	c0.04				0.43	
v/s Ratio Perm		0.00		c0.53		0.06
v/c Ratio	0.57	0.03		0.61	0.49	0.07
Uniform Delay, d1	63.3	61.0		2.6	2.1	1.3
Progression Factor	1.00	1.00		0.87	0.88	0.74
Incremental Delay, d2	6.1	0.1		1.8	0.6	0.1
Delay (s)	69.5	61.1		4.0	2.4	1.0
Level of Service	E	E		A	A	A
Approach Delay (s)	66.1			4.0	2.3	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	102.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

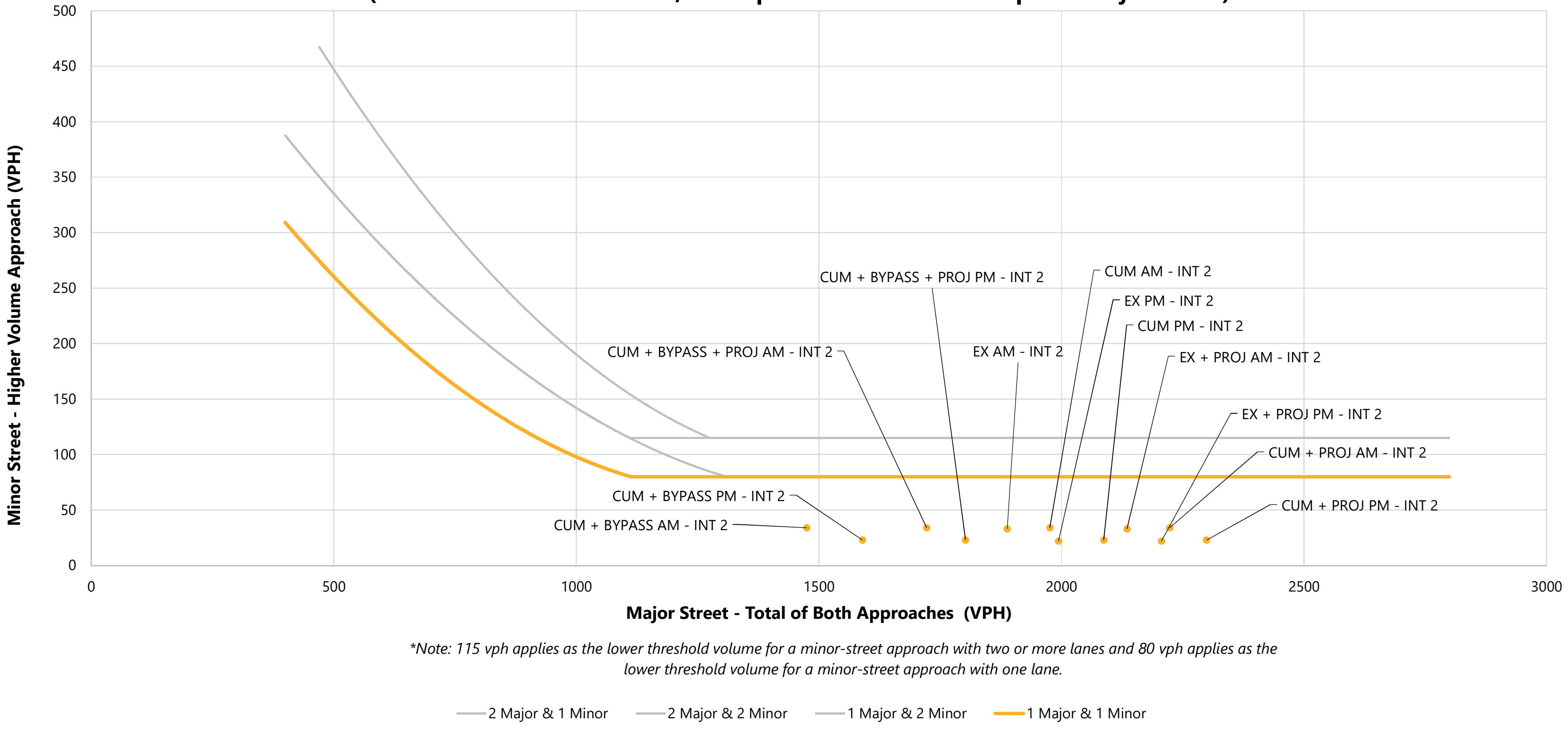
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰	↱	↰	↑	↑	↱
Traffic Volume (vph)	67	45	76	777	838	115
Future Volume (vph)	67	45	76	777	838	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	1770	1863	1863	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	67	45	76	777	838	115
RTOR Reduction (vph)	0	42	0	0	0	28
Lane Group Flow (vph)	67	3	76	777	838	87
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Actuated Green, G (s)	9.4	9.4	11.3	121.6	105.8	105.8
Effective Green, g (s)	9.4	9.4	11.3	121.6	105.8	105.8
Actuated g/C Ratio	0.07	0.07	0.08	0.87	0.76	0.76
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	118	106	142	1618	1407	1196
v/s Ratio Prot	c0.04		0.04	c0.42	c0.45	
v/s Ratio Perm		0.00				0.05
v/c Ratio	0.57	0.03	0.54	0.48	0.60	0.07
Uniform Delay, d1	63.3	61.0	61.8	2.1	7.6	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.31	2.22
Incremental Delay, d2	6.1	0.1	3.8	1.0	1.7	0.1
Delay (s)	69.5	61.1	65.7	3.1	11.7	9.9
Level of Service	E	E	E	A	B	A
Approach Delay (s)	66.1			8.7	11.4	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

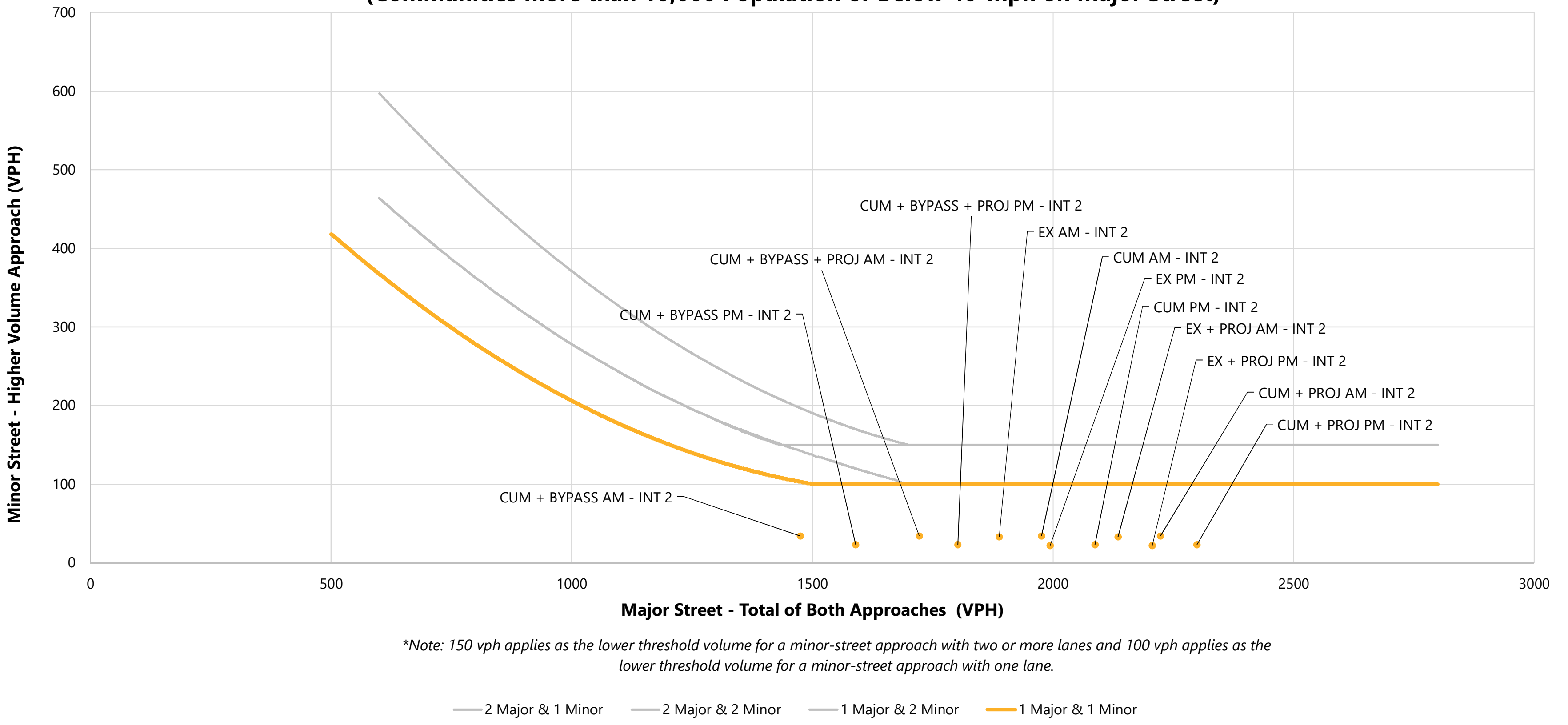
Appendix M: Signal Warrant Assessment Sheets

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume (Communities more than 10,000 Population or Below 40-mph on Major Street)



**Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.*

Figure 4C-3. Warrant 3, Peak Hour Vehicular Volume
(Communities more than 10,000 Population or Below 40-mph on Major Street)



**Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.*

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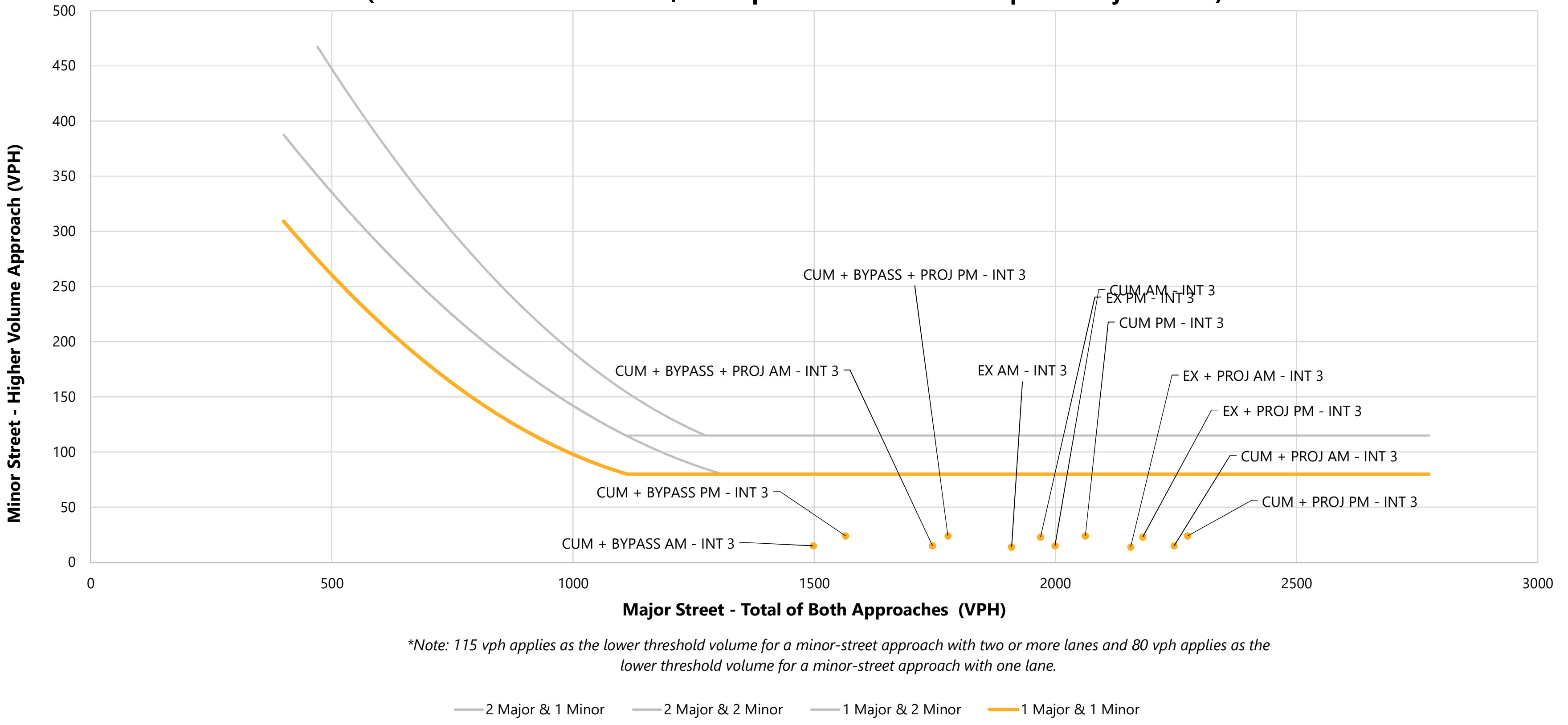
(Communities more than 10,000 Population or Below 40-mph on Major Street)



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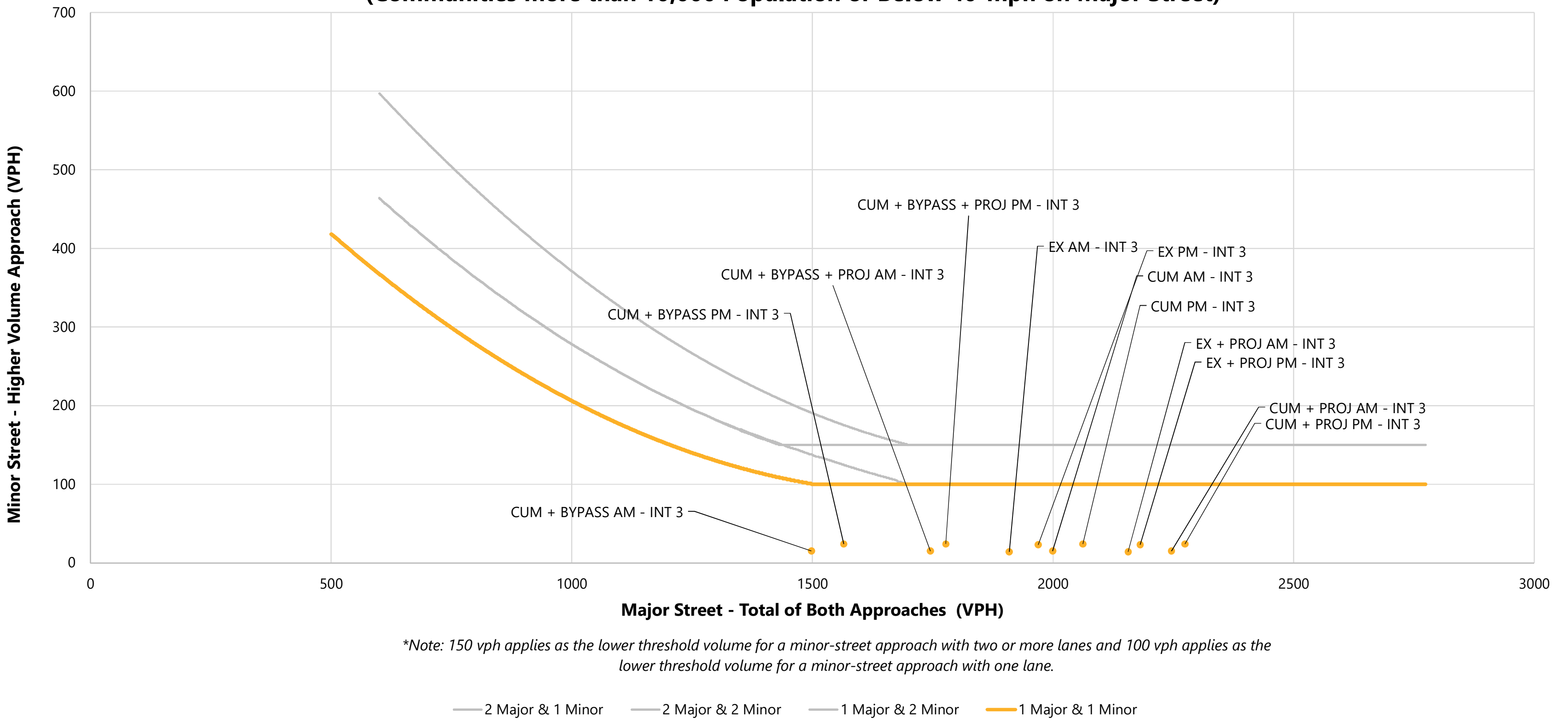

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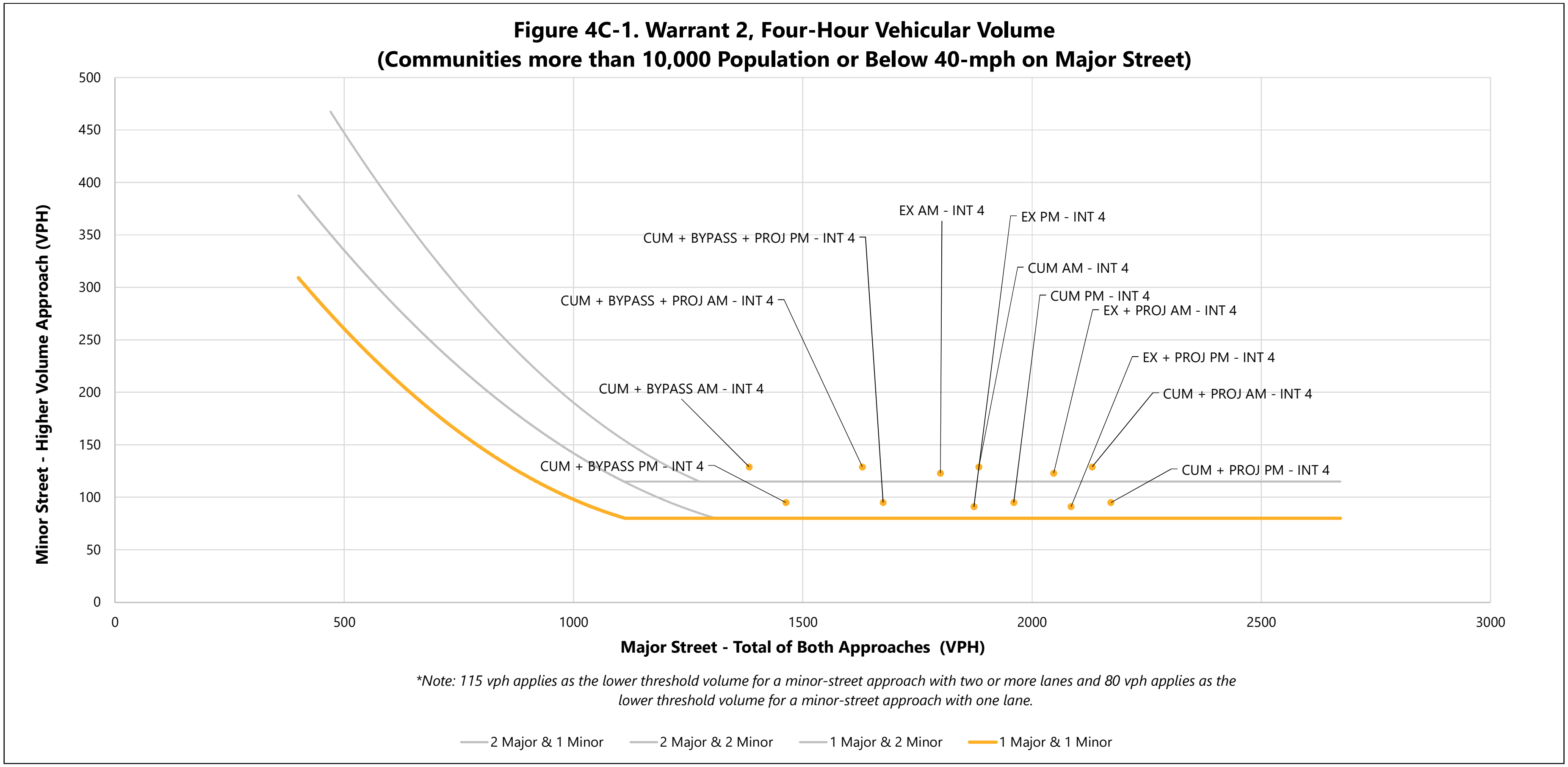

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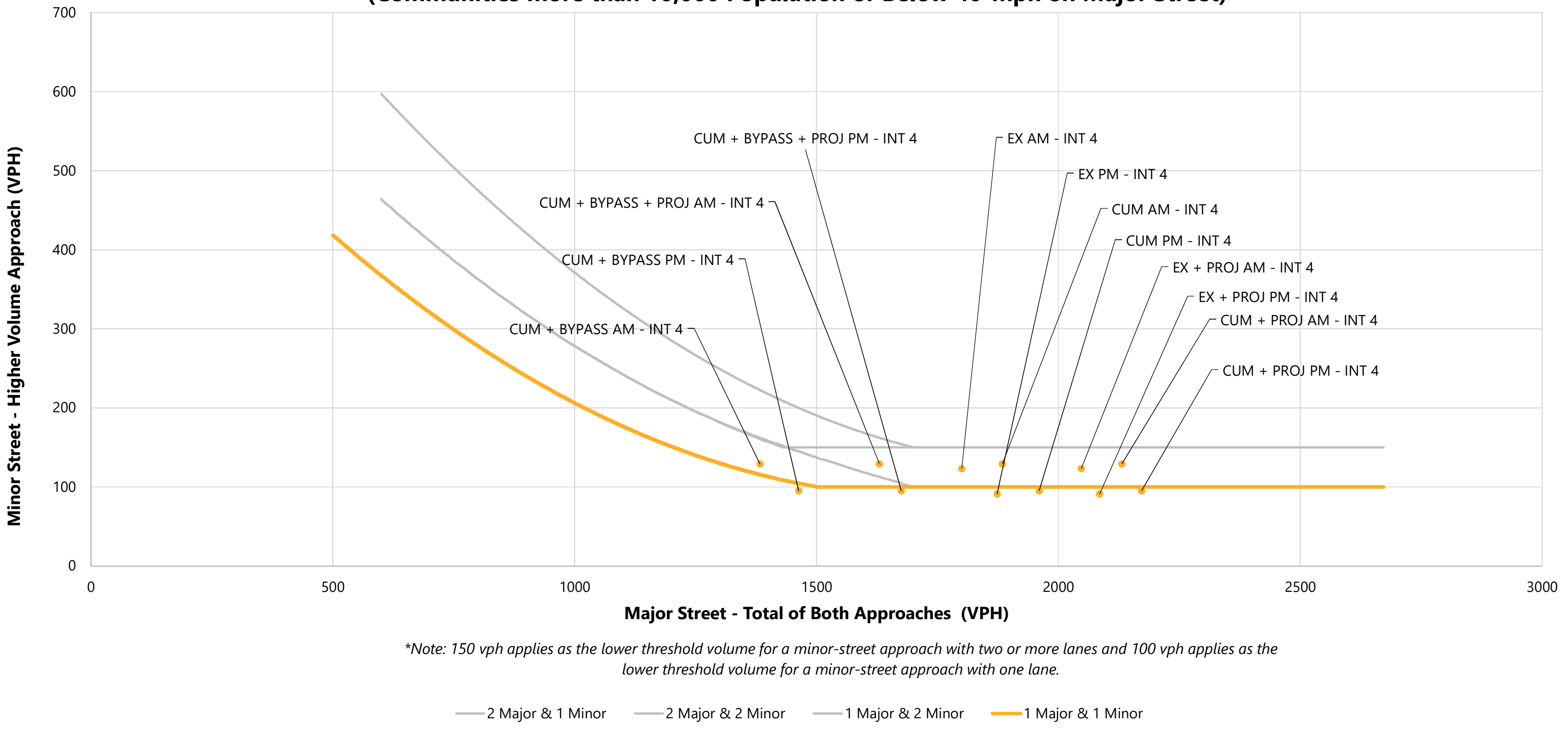

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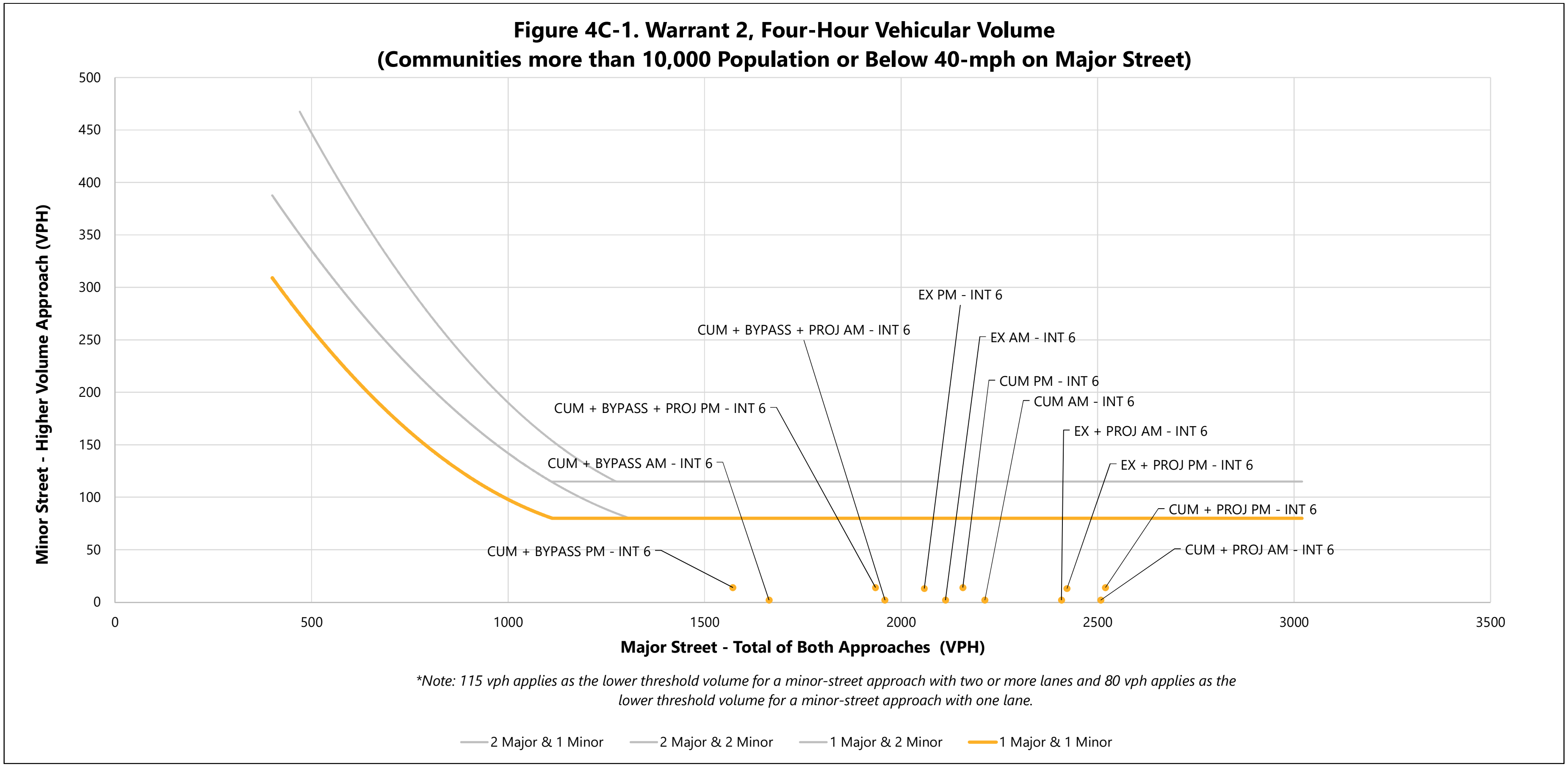

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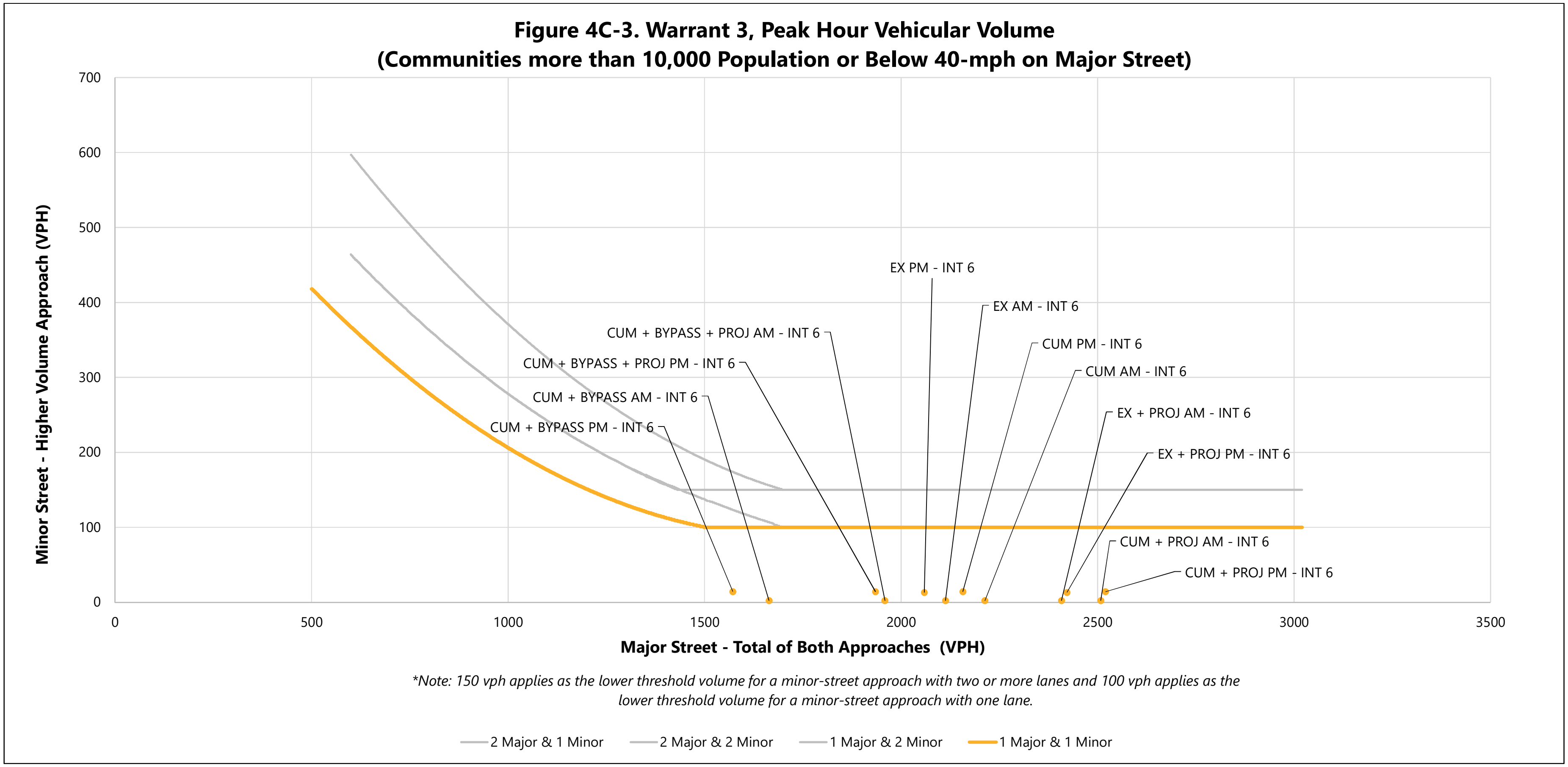

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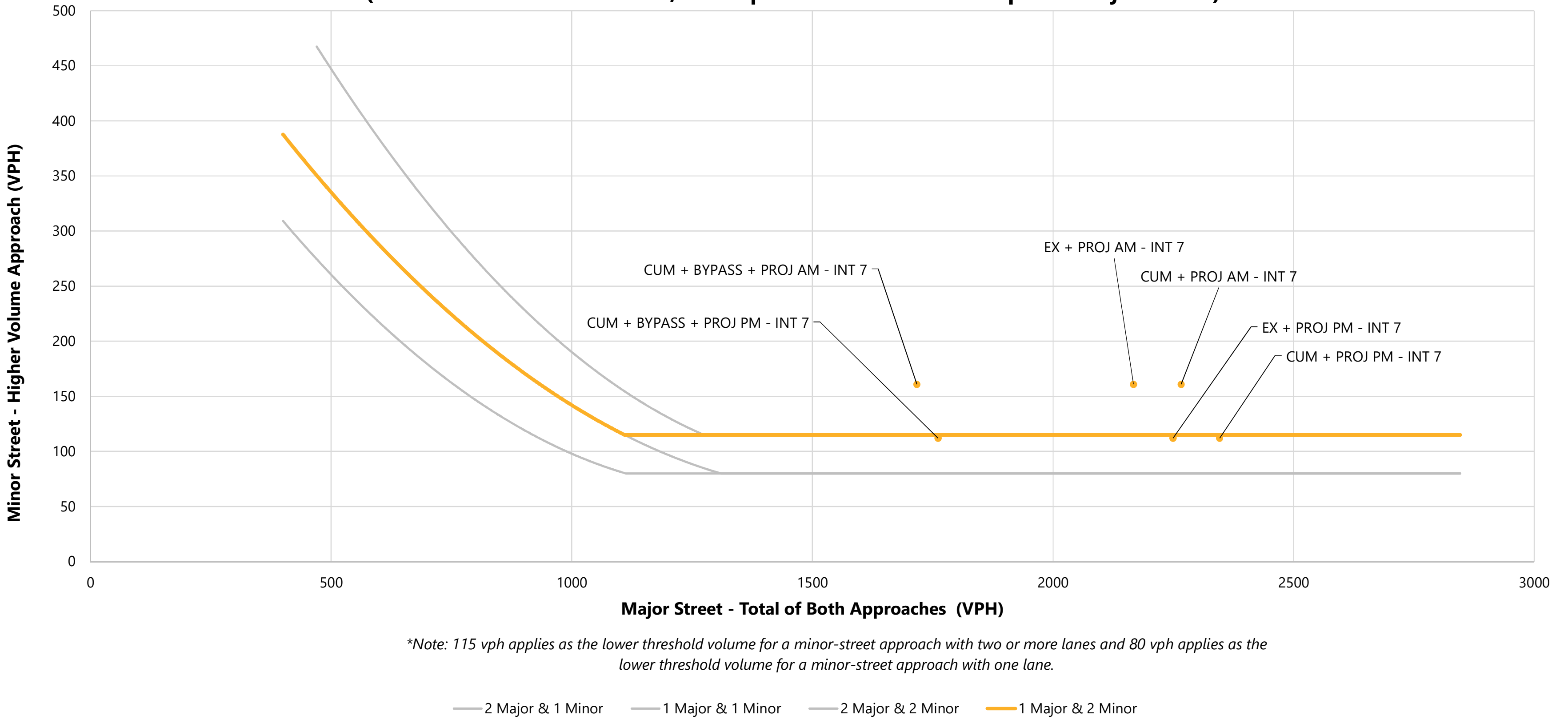

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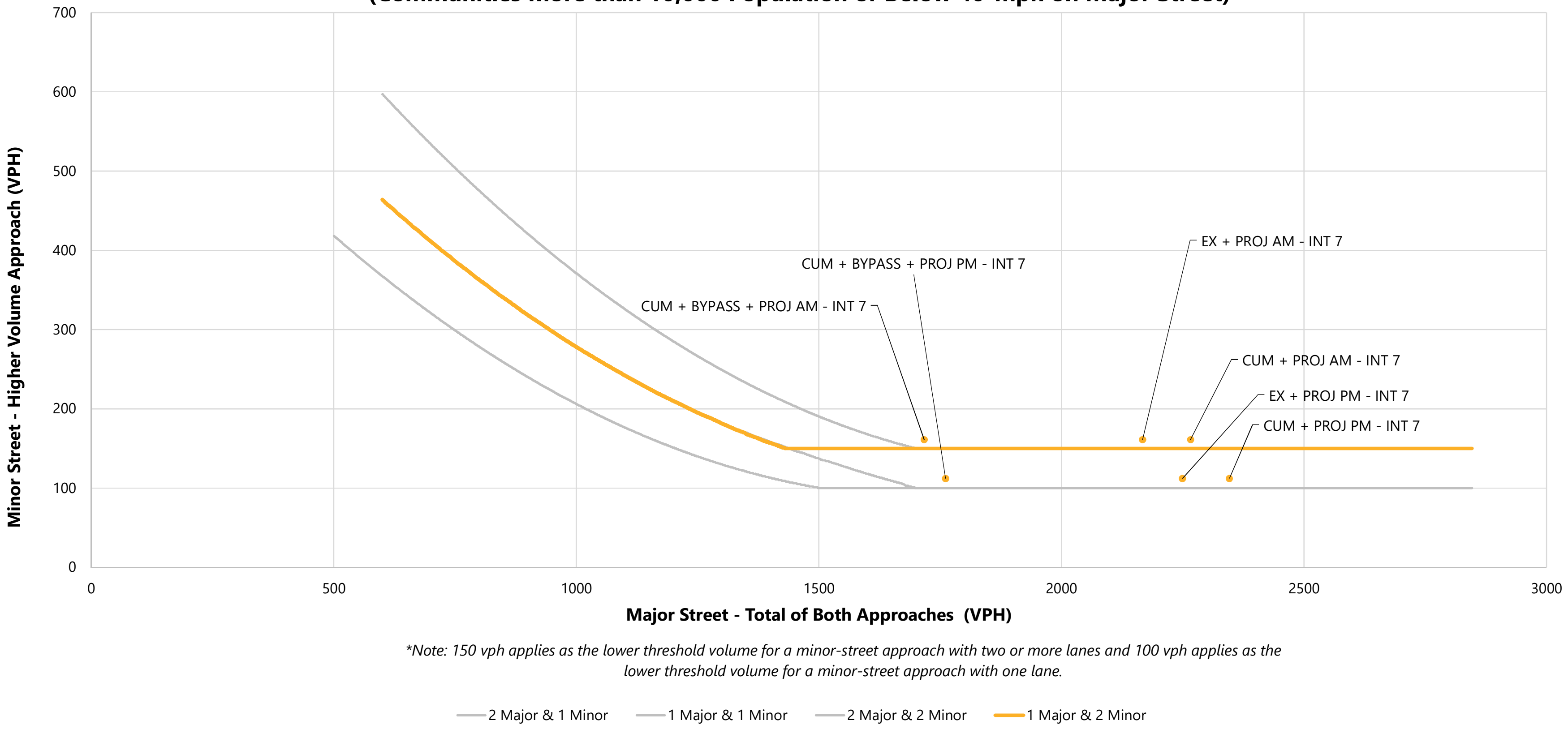

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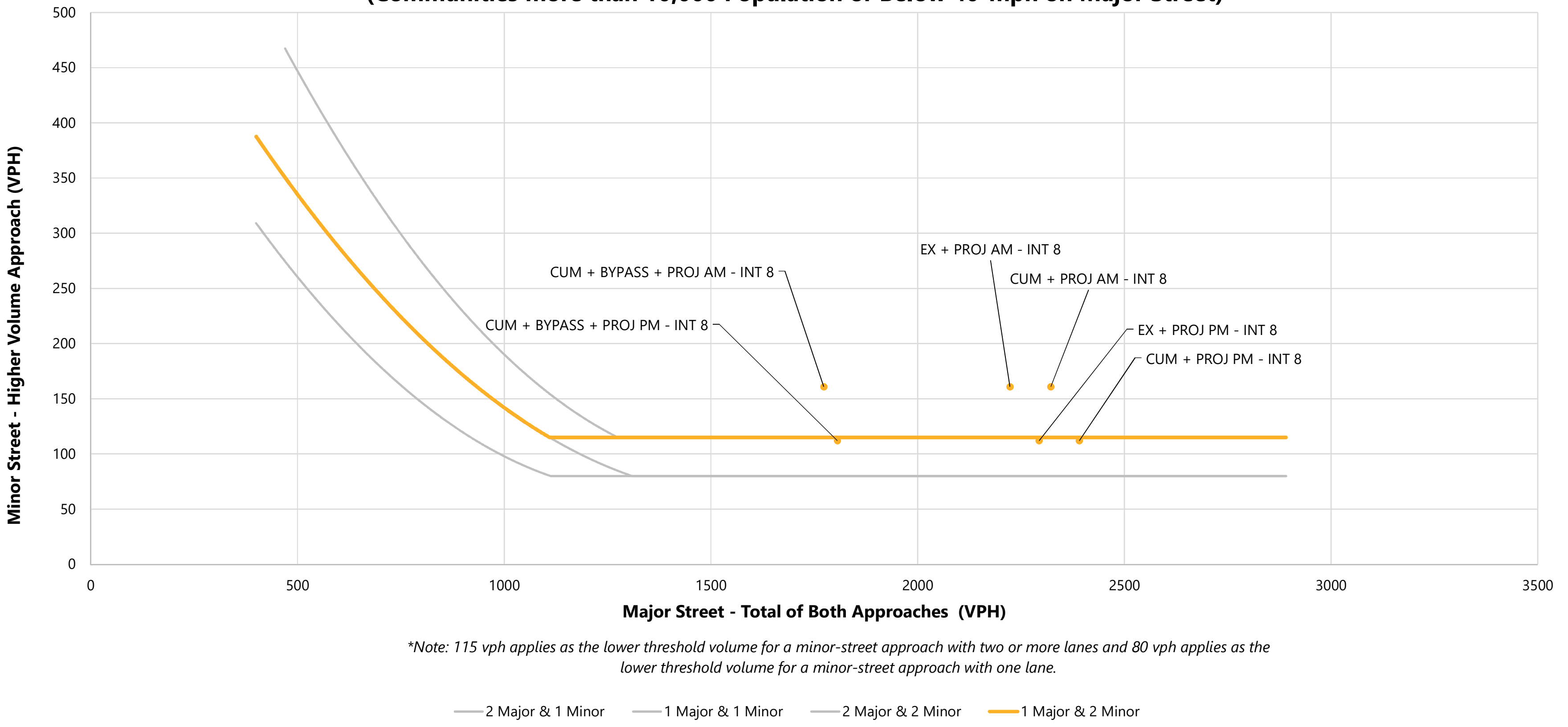

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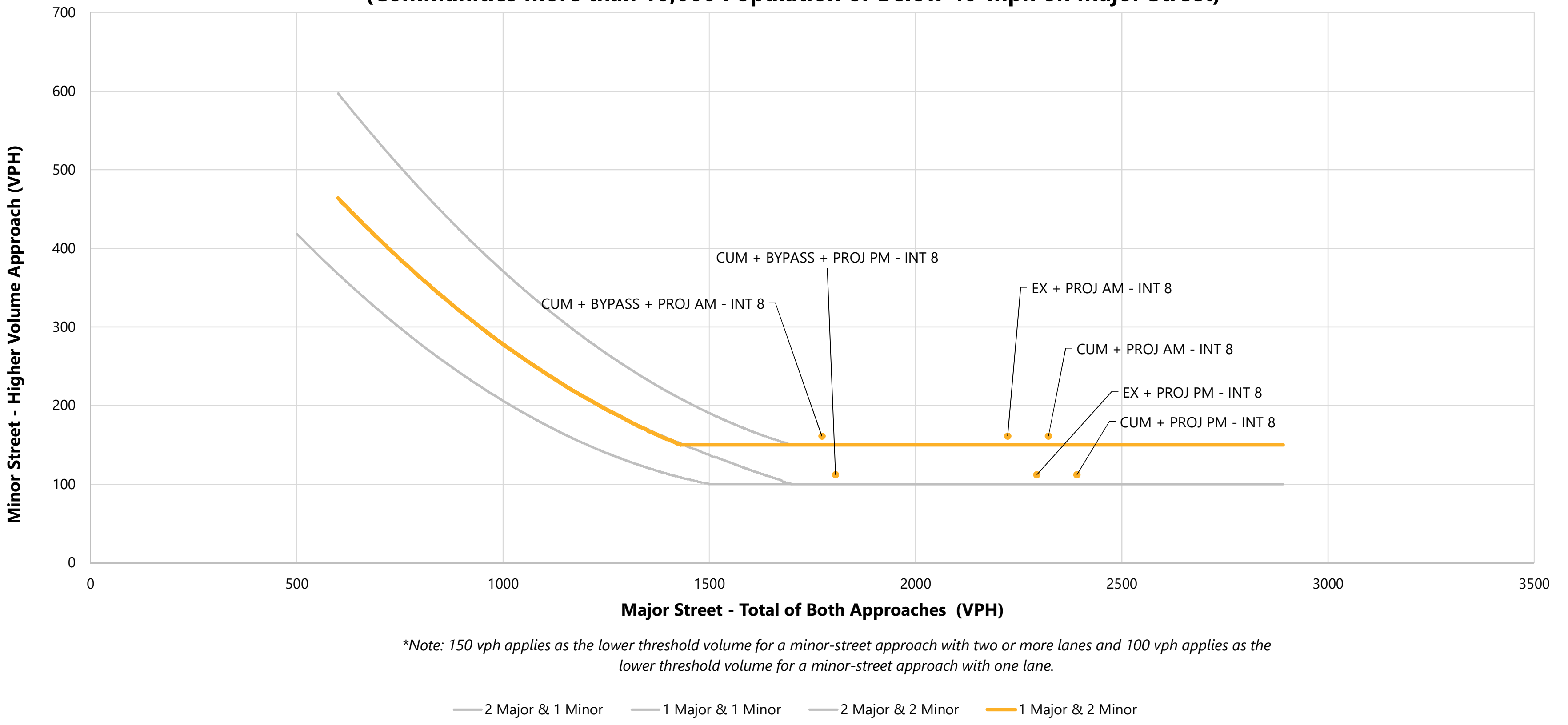

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Appendix F

Luhdorff & Scalmanini
Consulting Engineers

Technical Memorandum

DATE: October 23, 2023 FILE NO: 23-5-059

TO: Mr. Phil Rodriquez, Vice President Planned Communities
Lewis Management Corporation

FROM: William Gustavson, Senior Principal Project Manager
Oscar Serrano, P.E. Senior Engineer
Lucy Li, P.E. Project Engineer

SUBJECT: **WATER DEMAND AND SUPPLY ASSESSMENT WITH HERITAGE OAKS DEVELOPMENT IN THE CITY OF WHEATLAND, CALIFORNIA.**

INTRODUCTION

This technical memorandum (TM) summarizes the estimated water demand and supply requirements for the Heritage Oaks Estates – East Subdivision (Heritage Oaks) development based on a review of the recent water production and customer usage records for the City of Wheatland (City), California, and the development plan from Lewis Management Corporation (Lewis). LSCE prepared a TM in November 2012 to evaluate water requirements and additional groundwater supply design parameters based on the production data from the years 1999 through 2005. In 2019, LSCE developed a subsequent TM which summarized the re-simulation with production data from 2004 through 2015 and data from the City SCADA records for the peak month production for 2013 through 2018.

This TM includes water production, meter usage, and service connections (SC) data from 2009 to 2022 from the City of Wheatland Public Water System Statistics records. This TM also reflects the changes of Well 7 has been offline since 2015 per DDW inspection report. The revised Heritage Oaks development plan now has 685 SC , an increase from the previous analysis which included 472 SC. Based on the revised development plan, LSCE will perform a water demand evaluation and water supply reliability analysis according to the California Title 22 regulations. LSCE will also update the hydraulic model to conform with the revised Heritage Oaks development plan and present the results in a subsequent TM.

SUMMARY OF DATA

The historical data used in this analysis is summarized below.

City of Wheatland Public Water System Statics records:

- Existing and historical water service connections were provided for the years 2009 – 2015, and 2020 (**Attachment 1**).

- Production monthly totals were available and provided from 2009 through 2022. (**Attachment 2**).
- Customer usage (metering) records were provided for 2009 – 2022. (**Attachment 3**).

Heritage Oaks Subdivision plan (**Figure 1**, attached):

- Heritage Oaks includes 10 units consisting of 685 lots. The development will be constructed in three phases, Phase 1 – Units 1 to 3 consisting of 234 lots, Phase 2 – Units 4 to 6 consisting of 220 lots, and Phase 3 – Units 7 to 10 consisting of 231 lots.
- In addition to the residential lots, the development will connect to the water system consisting of:
    - A well pump station and storage tank in Parcel B consisting of 0.86 acres (AC).
    - One multi-use facilities (detention basin/plan fields/park) in Parcel D consisting of 5.87 AC.
    - Three parks, North Park in parcels C, Community Park in parcel I, and Riverside Park in Parcel J, totaling 9.36 AC.
    - One commercial facility, a 5.34 AC self-storage complex, in Unit 4.

EXISTING WATER SERVICE CONNECTIONS

The City currently serves potable drinking water to an estimated 3,500 people via approximately 1,130 service connections. Of those, 1,018 are single-family residential, 42 are multi-family residential, 63 are commercial/institutional, one (1) is agricultural irrigation, and six (6) are categorized as "Other". The proposed Heritage Oaks development will add 685 single-family residential connections, 5 landscape irrigation connections including multi-use facilities and parks, and one (1) commercial service connection.

From 2009 through 2015, the service connections data and customer class categories remained the same. For 2016 through 2019, LSCE assumes the number of service connections have not changed through email communication with the City. Compared to 2015, residential and commercial service connections were lower in 2020. There were no service connection in the landscape irrigation category in 2020, compared with 14 connections in this category in 2015. In 2020, other and agricultural irrigation had six (6) and one (1) service connections, respectively, but there were no service connections in these two categories prior.

A summary of the service connections from prior years and the proposed service connections for each phase of the Heritage Oaks development is shown in **Table 1**.

Table 1: Water Service Connections

Customer Class	2015	2020	Heritage Oaks Total	Heritage Oaks Phase 1	Heritage Oaks Phase 2	Heritage Oaks Phase 3
Single Family Residential	1,073	1,018	685	234	220	231
Multi-family Residential	97	42	0	0	0	0
Total Residential	**1,170**	**1,060**	**685**	**234**	**220**	**231**
Commercial/Institutional	74	63	1	0	1	0
Industrial	0	0	0	0	0	0
Landscape Irrigation	14	0	4	1	2	1
Other	0	6	0	0	0	0
Agricultural Irrigation	0	1	0	0	0	0
Total Metered Connections	**1,258**	**1,130**	**690**	**235**	**223**	**232**

WATER PRODUCTION AND CONSUMPTION

Historical water production is depicted in **Figure 2** (attached) for the period of 2009 to 2022. Data for 2016 is not included as the monthly production data from July to December 2016 was missing. Since 2014, annual production was lower than historical production but increased in 2022. In general, the yearly production was roughly between 200 to 350 million gallons (MG) per year. Population and commercial development in the City were relatively constant, which did not result in major changes in water production. The lowest production of 199 MG per year was during the dry year of 2015. The maximum production month occurred in July 2022.

Since the service connection categories and amounts were different after 2020, the customer usage data was analyzed separately from 2009 to 2019 and 2020 to 2022. The average annual consumption from 2009-2019, with estimated losses, is shown in **Figure 3**. Meter data for the year 2011 and production data for the year 2016 were not complete. Additionally, inaccurate data presented negative water losses in 2011, 2018, and 2019. Thus, these five years of data are not included in the data analysis. The average annual consumption from 2021 to 2022, with estimated losses, is shown in **Figure 4**. In 2020, there were meter records for landscape irrigation but no service connections in this category, while there were no meter data under the service connections of agricultural irrigation and other customer types but service connections in these two categories. So, the year 2020 was eliminated from the data analysis.

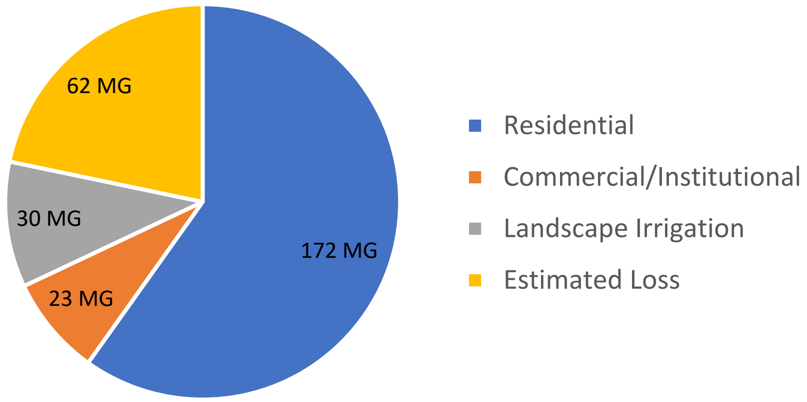


Figure 3: Average Annual Consumption and Losses (2009-2019)

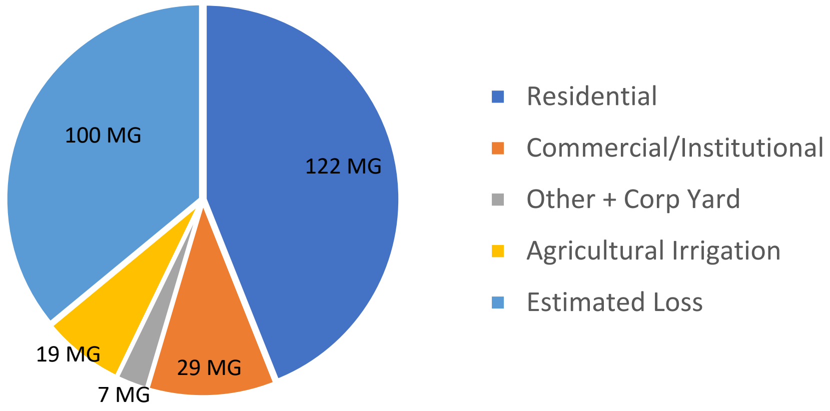


Figure 4: Average Annual Consumption and Losses (2021-2022)

Prior to 2020, water consumption comprised of approximately 60% residential usage, 10% irrigation usage, 8% commercial/institutional usage, and 22% system losses. The estimated losses are based on comparing production and consumption data from 2009 through 2019. After 2020, water consumption comprised of approximately 44% residential usage, 11% commercial and institutional usage, 3% other and corporation yard usage, 7% agricultural irrigation usage, and 36% system losses. The estimated losses are based on comparing production and consumption data. these losses typically change year-to-year due to varying operational practices (e.g., hydrant flushing), leakage, and old mechanical meters. Variations in customer usage may be attributed to water conservation measurements and drought regulations. Higher water usage in 2022 could be attributed to a non-drought year.

The metering data records were plotted to show the average total consumption by month and average total production by month, as shown in **Figure 5** and **Figure 6**.

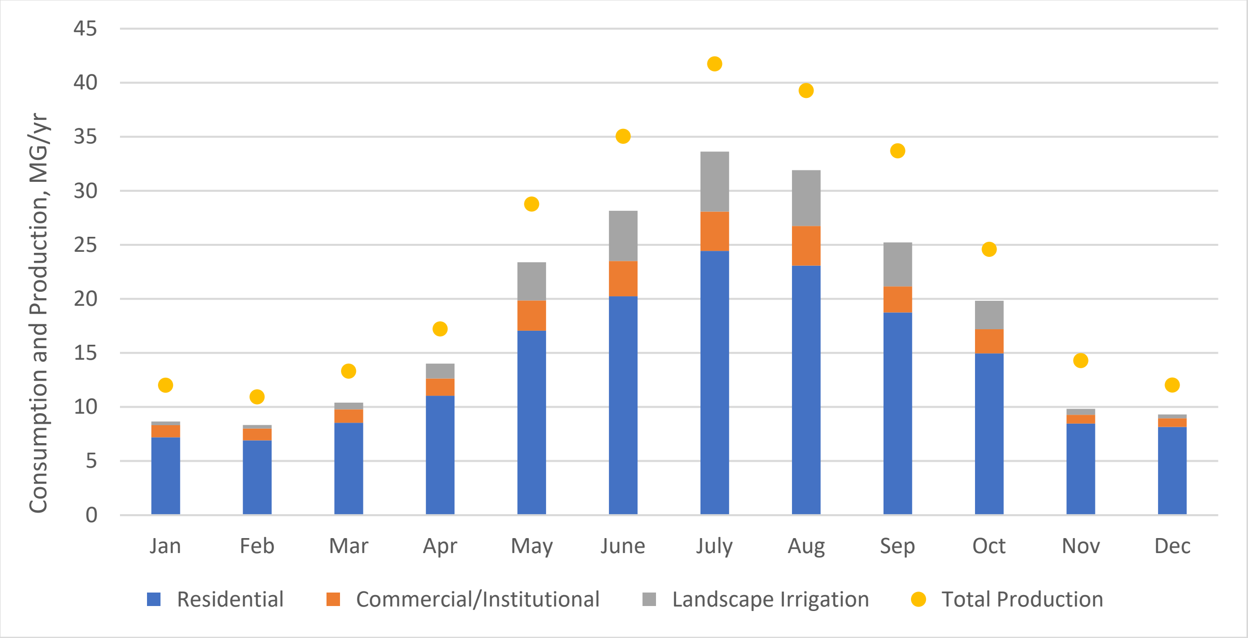


Figure 5: Average Monthly Consumption and Production (2009-2019)

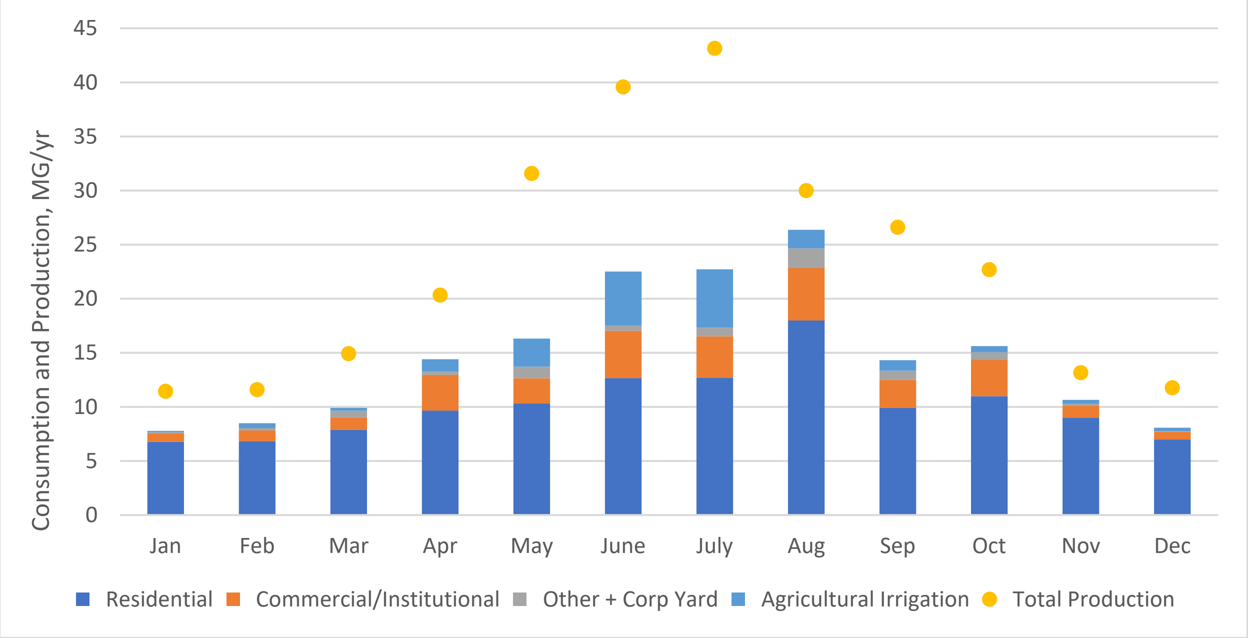


Figure 6: Average Monthly Consumption and Production (2021-2022)

METHODOLOGY FOR WATER USE FACTORS

This section describes methods to determine the water use factors developed from customer usage information within each customer class: residential, commercial/institutional, irrigation, and losses.

Several methods are available and commonly applied for the purpose of estimating water requirements, usually for the purpose of projecting increases in water demands over time. Among a broader range of methods, those with potential applicability in Heritage Oaks include the *Per-Capita Method*, the *Disaggregate Method*, the *Land Use Method*, and the *Regression Method*. For the development of this TM, LSCE employed the *Disaggregate Method*, as the available customer metering data was most conducive to this method.

In the *Disaggregate Method*, historical water metering records are subdivided, or disaggregated, into several significant use classes, e.g., residential, commercial/institutional, irrigation, and other. Based on disaggregated water use in each sector, unitized water consumptions are determined for each year of record, which is used to develop a base water use in each customer class, e.g., gallons per day per residential service connection, commercial connection, and irrigation connection.

Once a unitized water consumption is determined per connection of each customer class, the service connections can be represented as an equivalent dwelling unit (EDU), which is the amount of water used by a typical single-family residential house. The water system size is expressed as a total EDU for the existing system and at build-out.

WATER USE FACTORS

A review of meter data and service connection data from 2009 - 2022 was used to estimate water use factors for each customer class. Annual consumption for each customer class is presented as an average flow rate (gpm) and divided by the total connections to determine the flow rate per service connection (gpm/sc) for each customer class.

As seen in **Table 1**, Heritage Oaks has customer classes consisting of residential, commercial/institutional, and landscape irrigation, which is the same customer types as the City's records before 2020. Also, as mentioned before, data collected by the City included negative water losses in 2018 and 2019. For this reason, the 2017 data is considered suitable for estimating water use factors. In addition, an allowance is included for water losses so that the usage per connection reflects the total water requirements. The historical data had 20 to 35 percent of production as water loss, due to old mechanical meters and missed capturing data. The City commented that the water loss dropped to 10 percent in the recent couple of months. While Heritage Oaks is a new development with new meters and pipelines, a water loss of 10 percent is used for the projected factors to account for variations that occur in operational practices.

For planning purposes, the water use factors and EDU used for estimating future water demands are in **Table 2**.

Table 2: Current Annual Water Consumption per Service Connection (gpm/sc), Water Use Factors, and EDU Breakdown (2017)

Classification	Existing Connections	Average Usage Per Connection (gpm)	Water Use (MGY*)	EDU Per Connection	EDU
Residential (Total)	1,170	0.27	168	1.0	1,170
Commercial/Industrial	74	0.32	12	1.2	86
Landscape Irrigation	14	4.31	32	15.8	221
Total	1,258	---	212	---	1,477

* MGY: Million Gallon per Year

Based on this analysis, one EDU (or one typical residential household) is estimated to require on average approximately 0.27 gpm, 393 gallons per day, 11,786 gallons per month, and 143,392 gallons per year. Based on the EDU analysis, the total current average annual water requirements and total EDUs in the system are presented in **Table 2**. The commercial/industrial class has a 1.2 EDU equivalent water demand, and the landscape irrigation class has a 15.8 EDU equivalent water demand per connection.

By utilizing the future connections in the system (**Table 1**), the average annual water requirements and the total EDUs for the Heritage Oaks development and per phase are presented in **Table 3** and **Table 4**, respectively.

Table 3: Heritage EDU Breakdown

	Classifications			
	Residential	Commercial/ Industrial	Landscape Irrigation	Total
Average Usage per connection, gpm	0.27	0.32	4.31	
EDU per Connection	1.0	1.2	15.8	
Phase 1				
Service Connections	234	0	1	235
Water Use (MGY)	34	0	2	36
EDU	234	0	16	250
Phase 2				
Service Connections	220	1	2	223
Water Use (MGY)	32	0	5	36
EDU	220	1	32	253
Phase 3				
Service Connections	231	0	1	232
Water Use (MGY)	33	0	2	35
EDU	231	0	16	247
Heritage Oaks Total				
Service Connections	685	1	4	690
Water Use (MGY)	98	0	9	107
EDU	685	1	63	749

Table 4: Annual Water Requirements and EDUs for City plus Heritage Oaks

Customer Class	Service Connections	Water Usage MGY	EDU
City's Current	1,258	212	1,477
City’s Current plus Heritage Phase 1	1,493	248	1,727
City’s Current plus Heritage Phase 1 and 2	1,716	284	1,980
City’s Current plus Heritage Phase 1, 2 and 3	1,948	319	2,226

DAILY WATER DEMAND AND PEAKING FACTORS

The water system is designed to satisfy the water requirements, defined as the Average Day Demand (ADD), Maximum Day Demand (MDD), Peak Hour Demand (PHD), and Fire Demand. These factors determine the design capacity and sizing requirements of the water system. This section develops the daily water use and peaking factors that are needed to evaluate the adequacy of source and storage capacity in subsequent tasks.

Average Day Demand (ADD)

The ADD is determined by dividing the annual water requirements by 365 days. The current annual water requirement in the system is 212 MGY, as determined in **Table 4**. This equates to an ADD of 0.58 million gallons per day (MGD), or an average flow of 403 gpm. The annual water requirement for the City plus Heritage Oaks Phase 1 is 248 MGY, which equates to an ADD of 0.68 MGD, or an average flow of 471 gpm. The annual water requirement for the City plus Heritage Oaks Phase 1 and 2 is 284 MGY, which equates to an ADD of 0.78 MGD, or an average flow of 540 gpm. The annual water requirement for the City plus buildout of Heritage Oaks is 319 MGY, which equates to an ADD of 0.87 MGD, or an average flow of 607 gpm.

Maximum Day Demand (MDD)

In accordance with the California Waterworks Standards (Title 22), a public water system shall determine the MDD using the most recent ten years of data using daily production records, if available. When daily production data is not available, the MDD can be determined using the maximum month of production over the most recent ten years of operation and multiplying by a factor of 1.5 times the average daily consumption in the maximum month.

Table 5 summarizes the historic production since 2012 with the maximum day as calculated using the maximum month production with the 1.5 multiplier shown.

Table 5: Maximum Production 10-year Dataset (2012 – 2022)

Year	Max. Month Production (MG)	MDD using Title 22 (MGD)	Month
2012	54.1	2.6	August
2013	40.2	1.9	July
2014	33.2	1.6	July
2015	23.3	1.1	July
2016*	---	---	---
2017	35.9	1.7	July
2018	37.9	1.8	June
2019	37.7	1.8	July
2020	33.2	1.6	July
2021	34.2	1.7	June
2022	53.5	2.6	July
Maximum	53.5	2.6	

* Production data from July to December 2016 were missing.

Using the methodology in Title 22, the maximum month results in an MDD of 2.6 MGD, or an average flow of 1,799 gpm. The Title 22 method is more conservative and is thus used herein for the purpose of establishing a reliable source capacity requirement.

The ratio of the MDD to ADD (referred to as the MDD peaking factor) is used for projecting future demands based on future ADD estimates. From the current MDD of 2.6 MGD and the current ADD of 0.58 MGD, the MDD peaking factor is 4.46.

Peak Hour Demand (PHD)

The peak hour demand (PHD) is the peak flow rate that occurs over a period of several hours on the day of maximum use. Certain factors specific to each system affect the peak hour demand, such as irrigation timers and residential use patterns, which can be measured and represented by a system's diurnal curve if hourly data is available. In the absence of that information, Title 22 permits the use of a factor of 1.5 multiplied by the MDD. Diurnal curves were not evaluated in this study. The PHD of 2,698 gpm is calculated by multiplying 1.5 times the MDD of 1,799 gpm. The ratio of PHD to ADD (or the PHD peaking factor) is 6.70.

Utilizing the EDU analysis presented above, the EDU for the City plus the Heritage Oaks development is 2,226 EDU (**Table 4**) which results in an estimated ADD of 607 gpm using 0.27 gpm/EDU. The future MDD is 2,712 gpm using the peaking factor of 4.46, and the future PHD is 4,067 gpm using the peaking factor of 6.70. The estimated current and Heritage Oaks water demands for all three construction phases are shown in **Table 6**.

Table 6: Water Requirements for the City plus each Heritage Oaks Construction Phase

System	ADD		MDD		PHD	
	gpm	MGD	gpm	MGD	gpm	MGD
City's Current (1,477 EDU)	403	0.58	1,799	2.59	2,698	3.89
City plus Heritage Oaks Phase 1 (1,727 EDU)	471	0.68	2,103	3.03	3,155	4.54
City plus Heritage Oaks Phase 1 and 2 (1,980 EDU)	540	0.78	2,411	3.47	3,616	5.21
City plus Heritage Oaks Phase 1, 2, and 3 (2,226 EDU)	607	0.87	2,712	3.90	4,067	5.86

Fire Demand

Water requirements for fire suppression are derived from the governing fire flows of the system, which are dictated by the "California Fire Code, Part 9, Appendix B – Fire Flow Requirements for Buildings" setting forth fire flow and duration requirements given a specific structure size and type. In a review of these requirements, the minimum fire flow standards adopted for the water system are specific to a residential or commercial fire. For a residential structure, the fire flow standard is 1,500 gpm for 2 hours. For larger public buildings and commercial complexes, the fire flow standard is 3,000 for 3 hours. Minimum residual pressure shall be 20 psi at all locations in the system during a fire flow event. Per the City's General Plan and City Fire Storage Sizing Policies by Fire Chief Memo (**Attachment 4**), a Commercial

Fire is defined as 3,500 gpm for 3 hours, and a Residential Fire is defined as 1,500 gpm for 2 hours. The City's General Plan has more conservative requirements and is adopted in this analysis.

Good engineering practice dictates that when analyzing and designing infrastructure for pumping, storage, and conveyance facilities, the analysis is performed for MDD plus fire flow. The larger fire demand is used for sizing facilities. The residential and commercial fire requirements combined with the MDD are summarized in Table 7 below for the City and the Heritage Oaks development. The MDD plus fire flow demand of 6,212 gpm is higher than the PHD of 4,067 gpm, and therefore, it governs the sizing for distribution system hydraulic analysis.

Table 7: MDD Plus Fire Flow

Category	Fire Flow gpm	MDD plus Fire Flow gpm
Residential Fire (1,500 gpm for 2 hours)	1,500	4,212
Commercial Fire (3,500 gpm for 3 hours)	3,500	6,212

WATER SUPPLY SYSTEM

As shown in **Table 8** and the Division of Drinking Water (DDW) Annual Water System Inspection Report (**Attachment 5**), the City's water is supplied from six (6) existing groundwater wells (Wells 3, 4, 5, 6, 7, and 8) with a total source capacity of 4,050 gpm. The City's largest source is Well 8 with a capacity of 850 gpm. There are no water treatment facilities located within the City and only 12.5% sodium hypochlorite is injected for disinfection at each well site. The City has two storage tanks which provide a total storage capacity of 0.73 MG. Tank 1 is elevated and determines system pressure. There is a booster pump station located at Tank 2 with three domestic supply booster pumps and one fire flow booster pump. The City consists of one pressure zone ranging between 49 to 51 psi.

Wells 4 through 8 pump directly to the water distribution system. Well 3 pumps to Tank 2. Tank 1 is filled from the distribution system. Well 7 has been offline since 2015 due to chlorine residual issues. So, the current total source capacity with Well 7 offline is 3,570 gpm.

Table 8: Existing Infrastructure

Well		Emergency Power	Treatment	Tank		Booster Pump**	
Name	Capacity gpm			Name	Capacity gallon	Name	Capacity gpm
Well 3	750	Yes	None, Except Disinfection	Tank 1	70,000	Domestic Supply 1	450
Well 4	650	No		Tank 2	660,000	Domestic Supply 2	450
Well 5	670	Yes				Domestic Supply 3	800
Well 6	650	No				Fire Flow	2,000
Well 7*	480	Yes				Well 4 - 8	2,820
Well 8	850	Yes					
Total	3,570	2,270			730,000		6,520

* Well 7 is offline thus is excluded from the total well capacity.

** Tank 1 is elevated tank. Tank 2 has a booster pump station.

SOURCE CAPACITY REQUIREMENTS

Source capacity is the total amount of water available from water sources including the groundwater wells, storage tanks, and booster pumps. Section §64554 of Title 22, Chapter 16, California Code of Regulations, CCR; states: "at all times, a public water system's water source(s) shall have the capacity to meet the system's MDD." The source capacity is the estimated capacity from wells during the time at which the MDD occurs, which typically occurs in the summer when well capacities are lower due to lower groundwater levels. Title 22 also states that for water systems using only groundwater, "the system shall be capable of meeting MDD with the highest-capacity source offline". This is the basic reliability criterion used to determine the minimum required well capacity in the system.

Furthermore, Title 22 requires that the system be capable of meeting four (4) hours of PHD using the source capacity, storage capacity, and/or emergency source connections.

$$Storage\ Capacity = PHD\ (gpm) \times 4\ hours + Fire\ Demand \qquad (1)$$

$$Booster\ Capacity = The\ lager\ of\ [PHD\ \ or\ (Fire\ Demand + MDD\ )] \qquad (2)$$

The water system capacity requirements of the wells, storage tanks, and booster station for current and for each phase of the Heritage Oaks development is shown in Table 9.

Table 9: Water System Capacity Requirements Based on the Regulations

Facility	Capacity Requirement				Demand Type
	Current	Phase 1	Phase 2	Phase 3	
Well, gpm	1,799	2,103	2,411	2,712	MDD
Storage Tank, MG	0.42	0.53	0.64	0.75	4 Hours of PHD Operation Storage plus Fire Storage
Booster Pump, gpm	5,299	5,603	5,911	6,212	The Larger of Either PHD or Fire Flow Plus MDD

Source (Well) Capacity

Title 22 requires systems using only groundwater to be able to meet the MDD with the highest-capacity well offline. From **Table 8**, the total source capacity is 3,570 gpm. With the largest well offline (Well 8), the total source capacity is reduced to 2,720 gpm. Therefore, the City does have sufficient source capacity to meet the City and the Heritage Oaks development combined MDD of 2,712 gpm.

Storage (Tank) Capacity

Title 22 requires systems with 1,000 or more service connections to be able to meet four hours of PHD with source, storage capacity, and/or emergency connections. Given an estimated PHD for each construction phase in **Table 6**, the City's source capacity cannot meet the total PHD for the City and the Heritage Oaks development, and a portion of the PHD will have to be met with storage. Storage capacity is sized for the instantaneous peak flows (operational storage), fire safety, emergency, and unusable storage volumes, and the requirements for each construction phase are summarized in **Table 10** and described below.

- **Operational Storage:** Per regulations (Title 22), storage tanks are sized to meet four hours of PHD. The operational storage volume depends on the supply from well capacity per Equation 3. The City has a total source supply of 2,720 gpm with the largest well offline. Thus, the City has enough source capacity to meet PHD for the existing system, and the operational storage is marked as zero (0) in **Table 10**. The Heritage Oaks development will require additional operational storage for Phases 1, 2, and 3 consisting of 0.1 MG, 0.22 MG, and 0.32 MG, respectively.

$$Operational\ Storage = \{PHD\ (gpm) - Source\ Capacity (gpm)\ \} \times 4\ hours \qquad (3)$$

- **Fire Storage:** Fire flows in the distribution system are sized for the suppression of residential or commercial fires. There must be enough volume held in storage to fight the larger requirement, which is a commercial fire flow of 3,500 gpm for a three-hour duration. Therefore, for fire storage, the system must have a volume of 3,500 gpm for a three-hour duration (Equation 4), or 0.63 million gallons (MG).

$$Fire\ Storage\ per\ WTP = 3{,}500\ gpm\ \times 3\ hours \qquad (4)$$

- **Emergency Storage:** Emergency storage is the volume held in residence for periods where there are interruptions in the water supplies from the wells. Industry practice is to maintain an emergency volume equal to the MDD to protect against prolonged power outages. Alternatively, water supply facilities can be equipped with standby emergency generators to ensure there are uninterrupted power supplies to the water distribution system. Per the DDW inspection report, Wells 3, 5, 7, and 8 have backup power, however, Well 7 is currently offline. With the largest well offline, Wells 3 and 5 provide 1,420 gpm during a power outage. Per Equation 5, the City's available emergency capacity is not sufficient to meet PHD and requires 0.31 MG emergency storage. For the Heritage Oaks development, additional emergency storage will be needed for Phases 1 through Phase 3 consisting of 0.42, 0.53 and 0.64 MG, respectively.

$$Emergency\ Storage = \{PHD\ (gpm) - Source\ Capacity\ (gpm)\}\ \times 4\ hours \qquad (5)$$

- **Unusable Storage:** Unusable storage is the volume of water that is not available from a nominal tank volume due to inlet and outlet pipe configurations. The unusable volume is assumed to be five percent of the nominal volume of the storage tanks onsite (Equation 6). From **Table 8**, the City has a total of 0.73 MG storage volume from Tank 1 and 2. The unusable storage is 0.04 MG.

$$Unusable\ Storage\ = Nominal\ Tank\ Volume \times 5\% \qquad (6)$$

Table 10: Storage Requirements

WTP	Fire Storage	Operation Storage	Emergency Storage	Unusable Storage	Total
	MG	MG	MG	MG	MG
City's Current	0.63	0.00	0.31	0.04	0.97
Construction Phase 1	0.63	0.10	0.42	0.04	1.19
Construction Phase 2	0.63	0.22	0.53	0.04	1.41
Construction Phase 3	0.63	0.32	0.64	0.04	1.63

* The source capacity analysis above is based on Well 7 being offline, and the largest well offline.

Currently, the City has two storage tanks with a total capacity of 0.73 MG. Well 7 is offline due to water quality issues, and Well 3, 5, and 8 are equipped with backup generators. With the largest well offline, the City is short 0.97 MG of storage capacity for the exiting water system. For the Heritage Oaks development Phase 1, 2, and 3, the total storage requirements are 1.19, 1.41, and 1.63 MG, respectively.

Booster (Pressure Tank and Booster Pump) Capacity

Booster pump capacity is sized to meet the instantaneous water demand of the system, see Equation 2, and is defined as being the larger of either the Peak Hour Demand (4,067 gpm) or the MDD plus Fire Flow (6,212 gpm) for the City and Heritage Oaks combined. The City's Well 4 through 8 pump directly to the distribution system and have a total capacity of 2,820 gpm. Tank 2, which receives water from Well 3, has three booster pumps to supply a total of 1,700 gpm to the distribution system and one booster pump to supply 2,000 gpm for fire flow. Elevated Tank 1 provides constant system pressure to the distribution system. The water level in Tank 1 controls the Tank 2 booster pumps, and the water level in Tank 2 controls all the wells. Tank 1 is filled from the distribution system while the booster pumps are on. The total booster capacity is 6,520 gpm including the pressure tanks in Well 4 through 8 and the booster pumps for Tank 2, which is sufficient for the MDD plus Fire Flow.

SUMMARY

Based on the analysis of the City's current water system and the Heritage Oaks development plan, the capacity of the water source and booster pumps are sufficient for the existing and future water use. However, the City's existing storage facilities are not sufficient to meet the existing and full buildout requirements of the Heritage Oaks development and new water supply facilities will be needed to meet the storage requirements.

Per the past 10 years of records, the City's MDD of record is equivalent to 44% of the City's water supply availability. As discussed in this TM, Well 7 is offline due to water quality issues and if the City's largest well, Well 8 is offline, the City's MDD will be equivalent to 66% of the City's water supply availability, as shown in **Figure 7**. The City's storage capacity demand is 133% of the supply availability, and the booster pump requirement is equivalent to 81% of the booster system's availability. As shown in **Figure 7**, the City's current water infrastructure facilities are sufficient to meet the requirements for source capacity and booster pump capacity with the Heritage Oaks development, but are not sufficient to meet the storage capacity requirements.

A storage facility will be required before full buildout of the Heritage Oaks development is completed. For water supply reliability, a drinking water well should be considered. In today's construction market with supply chain delays, it may take up to two years to bid, construct and commission a well, well pump station, storage tank and booster pump station.

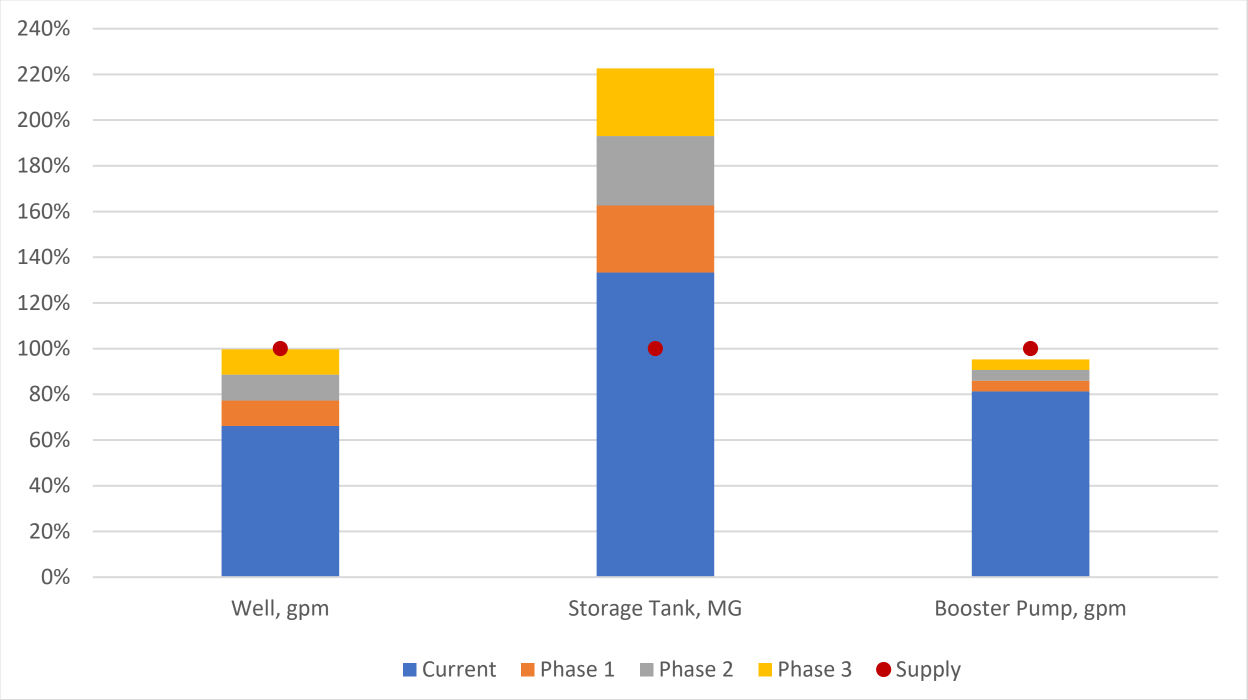


Figure 7: Percentage of Water Demand to the City's Current Supply Availability

Attachments

Figure 1 – Heritage Okas Subdivision Plan
Figure 2 – Historical Water Production
Attachment 1 – City's Service Connections and Populations Record
Attachment 2 – City's Historical Water Production
Attachment 3 – City's Historical Water Meter Usage
Attachment 4 – City Fire Storage Sizing Policies: Fire Chief Memo and General Plan
Attachment 5 – DDW Annual Inspection for Fiscal Year 2015-2016

Figure 1

Heritage Oaks Subdivision Plan

TENTATIVE SUBDIVISION MAP
TSTM 2023-0001 (LARGE AND SMALL LOT)
HERITAGE OAKS ESTATES - EAST

WHEATLAND, CALIFORNIA
NOVEMBER 2022 - REVISED MARCH 10, 2023
PAGE 1 OF 4

LAND USE SUMMARY

LOT SUMMARY*

VILLAGE NO. 1 =	83 LOTS	15.99 AC	5.19 DU/AC
VILLAGE NO. 2 =	63 LOTS	09.95 AC	6.33 DU/AC
VILLAGE NO. 3 =	88 LOTS	12.65 AC	6.48 DU/AC
VILLAGE NO. 4 =	77 LOTS	12.03 AC	6.57 DU/AC
VILLAGE NO. 5 =	76 LOTS	16.42 AC	5.24 DU/AC
VILLAGE NO. 6 =	67 LOTS	10.19 AC	4.08 DU/AC
VILLAGE NO. 7 =	49 LOTS	08.02 AC	6.86 DU/AC
VILLAGE NO. 8 =	50 LOTS	08.10 AC	6.17 DU/AC
VILLAGE NO. 9 =	70 LOTS	11.82 AC	5.92 DU/AC
VILLAGE NO. 10 =	62 LOTS	09.17 AC	6.76 DU/AC
SUBTOTAL =	685 LOTS	114.34 AC	

MAJOR ROAD - DEVALENTINE PKWY	4.59 AC	
MAJOR ROAD - RED OAK DRIVE	1.01 AC	
SR 65 LANDSCAPE (SOUTH)	3.30 AC	
LOT A - DETENTION/PARK	3.53 AC	
LOT B - WATER WELL SITE #1	0.86 AC	
LOT C - NORTH PARK	1.37 AC	
LOT D - DETENTION/PARK	4.02 AC	
LOT E - MALONE PASEO (NORTH)	0.70 AC	
LOT F - WATER WELL SITE #2	0.08 AC	
LOT G - MALONE PASEO (CENTRAL)	0.38 AC	
LOT H - MALONE PASEO (SOUTH)	0.81 AC	
LOT I - COMMUNITY PARK	4.96 AC	
LOT J - RIVERSIDE PARK	2.08 AC	
LOT K - LEVEE ROW	5.10 AC	
LOT L - RIVERSIDE OPEN SPACE	2.83 AC	
SUBTOTAL =	35.62 AC	
TOTAL =	149.96 AC	4.57 DU/AC

*ALL ACREAGES AND DENSITIES EXCLUDE MAJOR ROADS.

SURVEYORS STATEMENT:
I HEREBY STATE THAT ALL EASEMENTS OF RECORD ARE SHOWN AND LABELED PER PRELIMINARY TITLE REPORT BY FIRST AMERICAN TITLE COMPANY ORDER NUMBER 5102-5933317 DATED DECEMBER 30, 2021.

SEAN M. MINARD
No. C52593
Exp. 12-31-22

SEAN MINARD, P.E. 52593, P.L.S. 8397

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF WHEATLAND, COUNTY OF YUBA, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL ONE:
LOTS A, B, C, 1, 2, 4 AND 5, AS SHOWN ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STATE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

PARCEL TWO:
THE STREETS SHOWN AS HERITAGE OAKS PARKWAY, BLUE OAK PARKWAY AND DEVALENTINE PARKWAY ON THE MAP ENTITLED "HERITAGE OAKS ESTATES EAST LARGE LOT FINAL MAP", TRACT NO. 2006-019, FILED IN THE OFFICE OF THE COUNTY RECORDER OF YUBA COUNTY, STA TE OF CALIFORNIA ON DECEMBER 12, 2007 IN BOOK 88 OF MAPS, AT PAGES 27 THROUGH 32.

APN: 015-490-023-000; 015-490-024-000; 015-490-025-000; 015-490-026-000; 015-490-028- 000; 015-720-009-000; 015-720-010-000; 015-720-011-000; 015-720-012; 015-720-013-000 (PARCEL ONE) AND 015-490-030-000 (PARCEL TWO)

CITY OF WHEATLAND APPROVAL:
THE CITY OF WHEATLAND PLANNING COMMISSION HAS CONSIDERED AND APPROVED RESOLUTION 23-0XX APPROVING TENTATIVE PARCEL MAP NO. 2023-0001 DURING THE PLANNING COMMISSION MEETING ON __________, 2023.

CITY OF WHEATLAND ______________________ DATE:

OWNER STATMENT

OWNER
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

APPLICANT
LEWIS INVESTMENT CO., LLC
9216 KIEFER BLVD., SUITE 4
SACRAMENTO, CA 95826
CONTACT: PHIL RODRIGUEZ
PHONE: (916) 363-2617

ENGINEER/SURVEYOR
MHM INCORPORATED
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
CONTACT: SEAN MINARD, P.E., P.L.S.
PHONE: (530) 742-6485

ASSESSOR'S PARCEL NO.
015-490-023, 024, 025, 026, 028, AND 030
015-720-009, 010, 011, 012, AND 013

AREA OF TENTATIVE MAP
149.96 GROSS ACRE

EXISTING USE
VACANT

EXISTING GENERAL PLAN DESIGNATION
LOW DENSITY RESIDENTIAL

PROPOSED GENERAL PLAN DESIGNATION
LOW DENSITY RESIDENTIAL

EXISTING ZONING
LDR

PROPOSED ZONING
LDR

LEVEE PROTECTION
RECLAMATION DISTRICT NO. 2103

SCHOOL DISTRICT - HIGH SCHOOL
WHEATLAND UNION HIGH SCHOOL DIST
WESTERN PLACER UNIFIED SCHOOL DIST

SCHOOL DISTRICT - ELEMENTARY
WHEATLAND ELEMENTARY SCH DIST
WESTERN PLACER UNIFIED SCH DIST

FIRE PROTECTION
WHEALTAND FIRE AUTHORITY

SANITARY SEWER
CITY OF WHEATLAND

DOMESTIC WATER
OLIVEHURST PUBLIC UTILITIES DISTRICT

STORM DRAINAGE
CITY OF WHEATLAND

ELECTRICITY
PACIFIC GAS AND ELECTRIC

NATURAL GAS
PACIFIC GAS AND ELECTRIC (OPTIONAL)

TELEPHONE
AT&T

CABLE
COMCAST

GENERAL NOTES:

1. SUBDIVIDER RESERVES THE RIGHT TO PHASE DEVELOPMENT AND FILE MULTIPLE FINAL MAPS PURSUANT TO SECTION 66456.1 (A) OF THE SUBDIVISION MAP ACT.

2. A 10.0 FOOT BEHIND SIDEWALK PUBLIC UTILITY EASEMENT SHALL BE LOCATED ADJACENT TO ALL PUBLIC RIGHT OF WAYS UNLESS ANOTHER CONFIGURATION IS APPROVED BY THE CITY COMMUNITY DEVELOPMENT DIRECTOR.

3. THIS EXHIBIT IS FOR TENTATIVE MAP PURPOSES ONLY, ACTUAL DIMENSIONS, ROAD ALIGNMENTS, ACREAGE, AND YIELDS ARE TO BE VERIFIED PRIOR TO FINAL MAP.

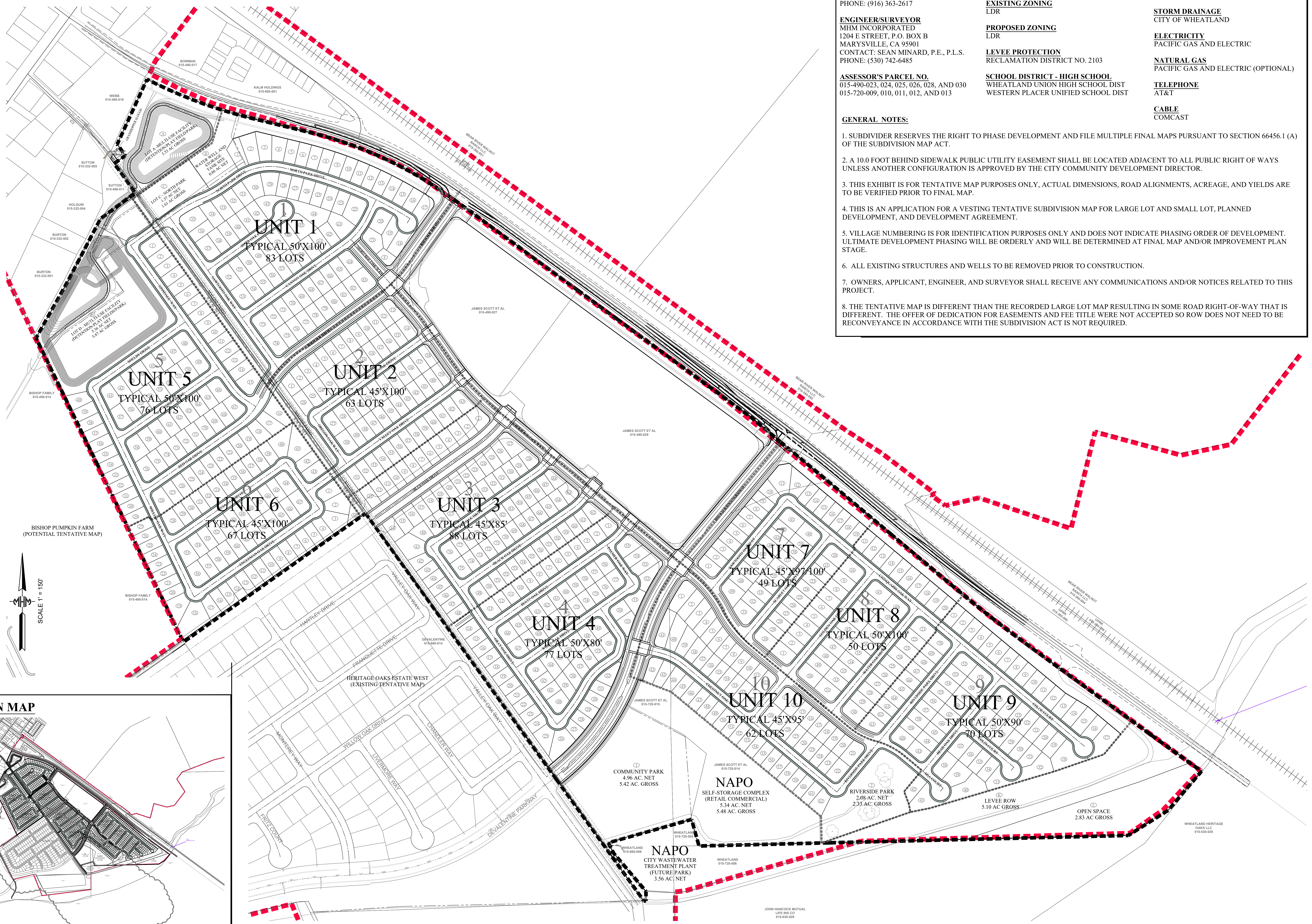
4. THIS IS AN APPLICATION FOR A VESTING TENTATIVE SUBDIVISION MAP FOR LARGE LOT AND SMALL LOT, PLANNED DEVELOPMENT, AND DEVELOPMENT AGREEMENT.

5. VILLAGE NUMBERING IS FOR IDENTIFICATION PURPOSES ONLY AND DOES NOT INDICATE PHASING ORDER OF DEVELOPMENT. ULTIMATE DEVELOPMENT PHASING WILL BE ORDERLY AND WILL BE DETERMINED AT FINAL MAP AND/OR IMPROVEMENT PLAN STAGE.

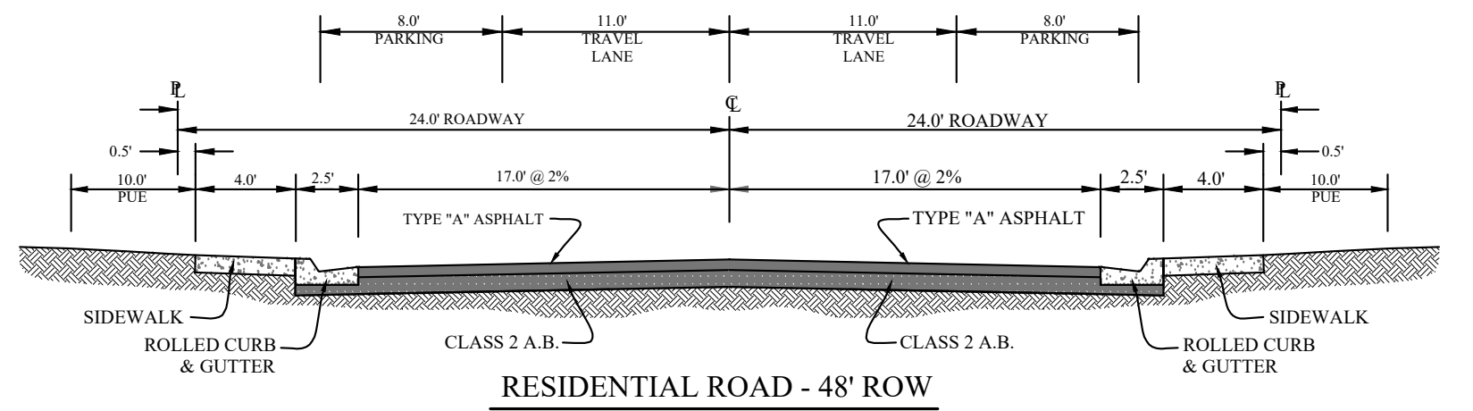
6. ALL EXISTING STRUCTURES AND WELLS TO BE REMOVED PRIOR TO CONSTRUCTION.

7. OWNERS, APPLICANT, ENGINEER, AND SURVEYOR SHALL RECEIVE ANY COMMUNICATIONS AND/OR NOTICES RELATED TO THIS PROJECT.

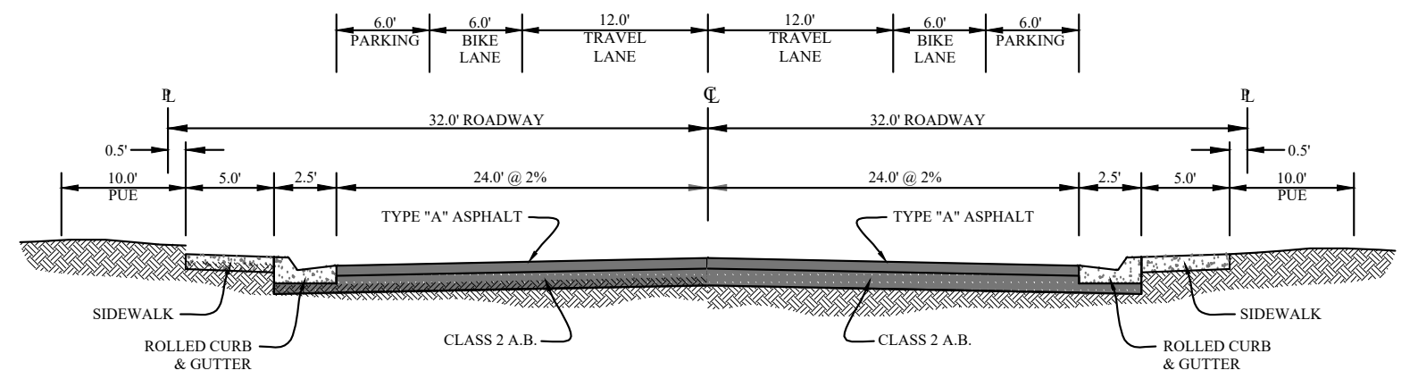
8. THE TENTATIVE MAP IS DIFFERENT THAN THE RECORDED LARGE LOT MAP RESULTING IN SOME ROAD RIGHT-OF-WAY THAT IS DIFFERENT. THE OFFER OF DEDICATION FOR EASEMENTS AND FEE TITLE WERE NOT ACCEPTED SO ROW DOES NOT NEED TO BE RECONVEYANCE IN ACCORDANCE WITH THE SUBDIVISION ACT IS NOT REQUIRED.



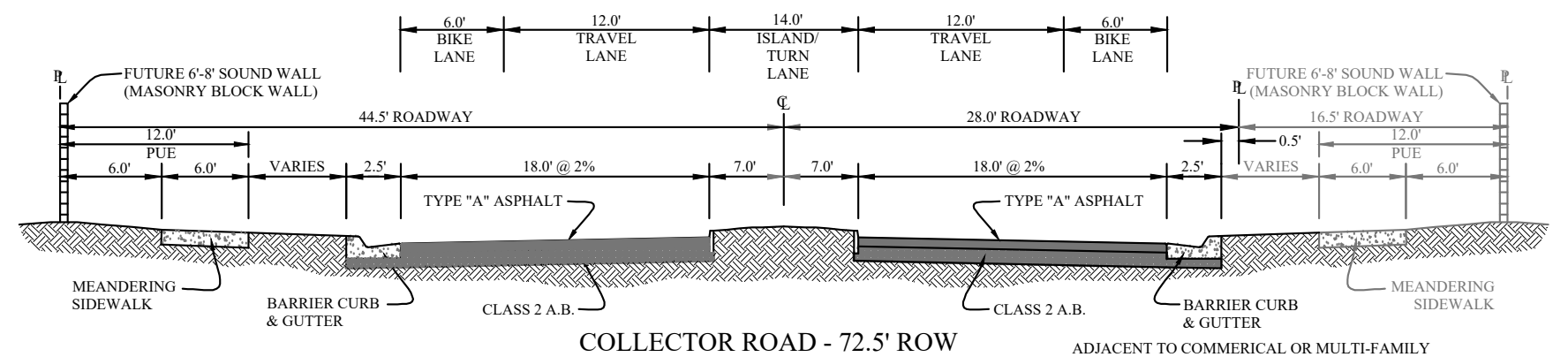
LOCATION MAP



RESIDENTIAL ROAD - 48' ROW
NOT TO SCALE
ALL INTERIOR ROADS SERVING OVER 500 ADT

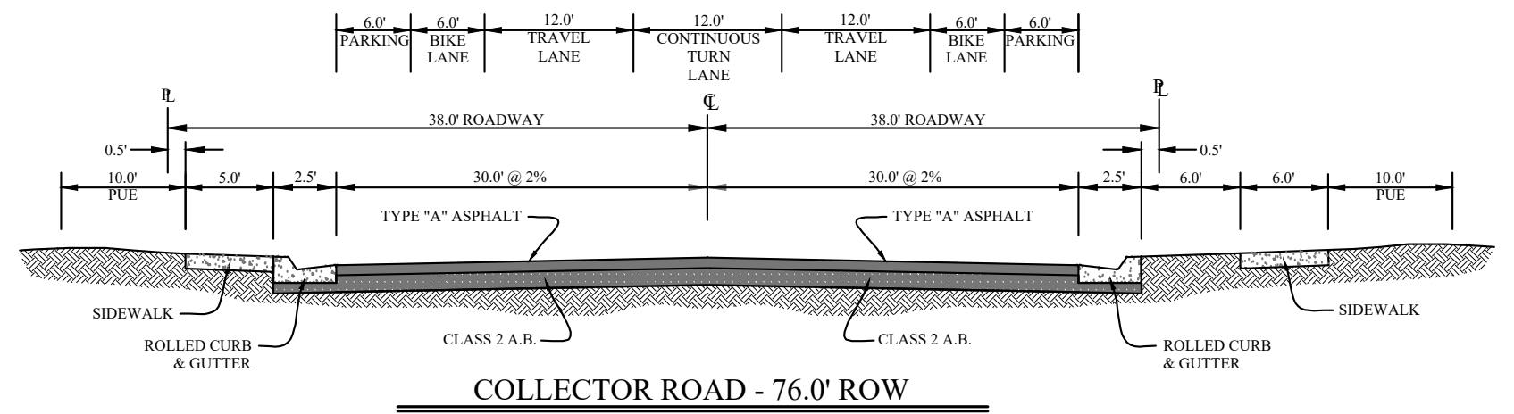


MINOR COLLECTOR ROAD - 64.0' ROW
NOT TO SCALE
HERITAGE OAK WAY - SCARLET OAK DRIVE TO RIVERSIDE DRIVE

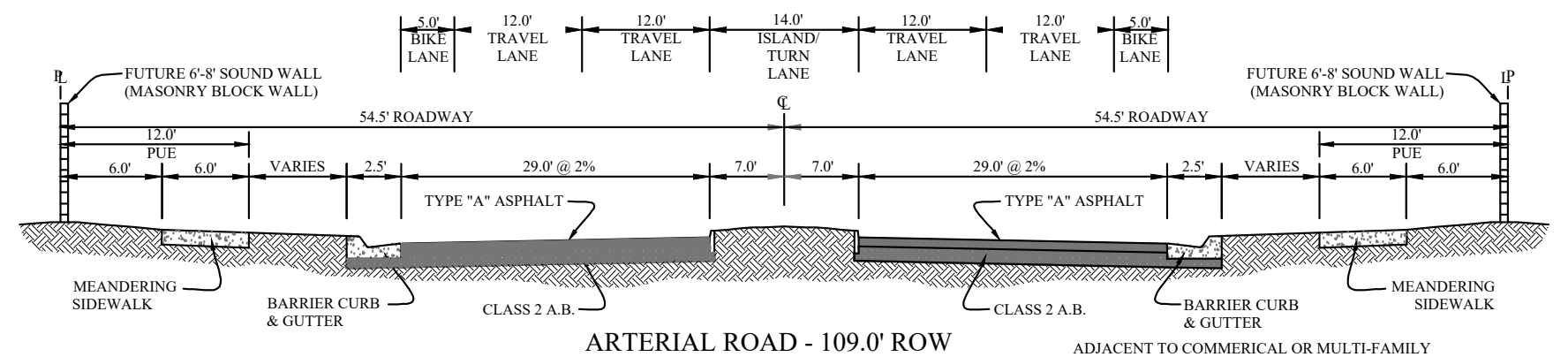


COLLECTOR ROAD - 72.5' ROW
NOT TO SCALE
HERITAGE OAK WAY - RED OAK DRIVE TO DEVALENTINE PARKWAY

ADJACENT TO COMMERICAL OR MULTI-FAMILY RESIDENTIAL, THE PROPERTY LINE SHALL BE BEHIND CURB AND GUTTER SIMILAR TO COLLECTOR ROAD CROSS SECTION.



COLLECTOR ROAD - 76.0' ROW
NOT TO SCALE
RED OAK DRIVE - MALONE PASEO TO HERITAGE OAK WAY
BLUE OAK DRIVE - HERITAGE OAKS WAY TO WEST BOUNDARY
HERITAGE OAKS WAY - DEVALENTINE PARKWAY TO SCARLET DRIVE



ARTERIAL ROAD - 109.0' ROW
NOT TO SCALE
DEVALENTINE PARKWAY - SR 65 TO WEST BOUNDARY
RED OAK DRIVE - SR 65 TO HERITAGE OAKS (NO ISLAND)

ADJACENT TO COMMERICAL OR MULTI-FAMILY RESIDENTIAL, THE PROPERTY LINE SHALL BE BEHIND CURB AND GUTTER SIMILAR TO COLLECTOR ROAD CROSS SECTION.

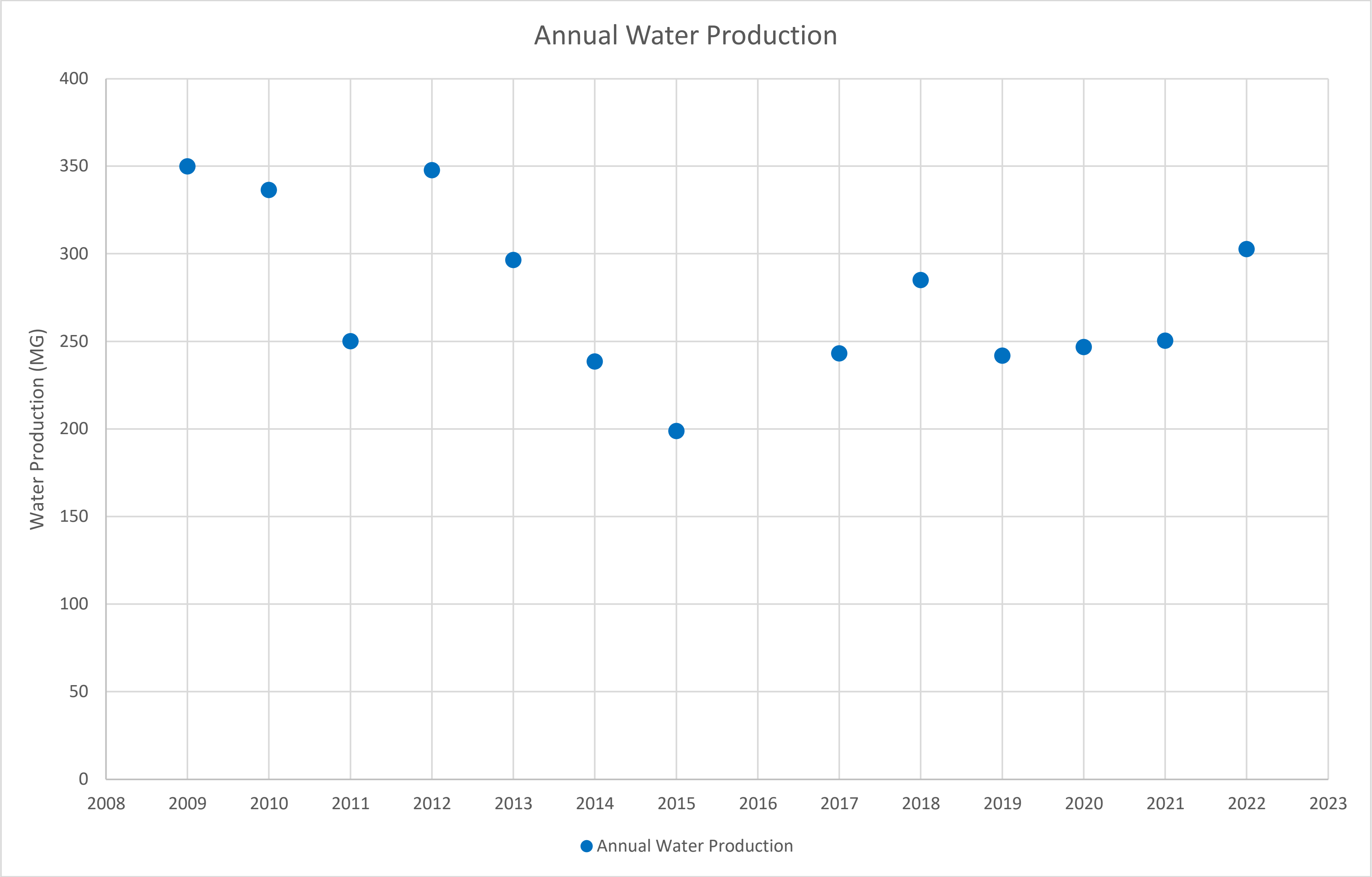
2 INDICATES PROPOSED PHASE

M·H·M
ENGINEERS & SURVEYORS SINCE 1892
1204 E STREET, P.O. BOX B
MARYSVILLE, CA 95901
TEL: 530.742.6485
FAX: 530.742.5639

FOR PLANNING COMMISSION APPROVAL

Figure 2

Historical Water Production



Luhdorff & Scalmanini
Consulting Engineers

Historical Water Production

23-5-059 / Water Supply Assessment (WSA) for Heritage Oaks Subdivision, City of Wheatland, CA

Figure 2

Attachment 1

City’s Service Connections and Populations Record

Attachment 1. Service Connections

	2009	2010	2011	2012	2013	2014	2015	2016 - 2019	2020
Single Family Residential	1,073	1,073	1,073	1,073	1,073	1,073	1,073		1,018
Multi-family Residential	97	97	97	97	97	97	97		42
Commercial/Institutional	74	74	74	74	74	74	74		63
Industrial	**0**	0	0	0	0	0	0		**0**
Landscape Irrigation	14	14	14	14	14	14	14		0
Other	**0**	0	0	0	0	0	0		**6**
Agricultural Irrigation	0	0	0	0	0	0	0		1
Total Metered Connections	**1,258**	**1,258**	**1,258**	**1,258**	**1,258**	**1,258**	**1,258**		**1,130**

Population Served	**3,580**	**3,580**	**3,580**	**3,469**	**3,469**	**3,469**	**3,469**		**3,456**

Attachment 2

City’s Historical Water Production

Attachment 2. Historical Water Production (2009 - Present), MG

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual Production
2009	11.96	11.68	15.42	27.90	38.50	39.93	57.07	46.84	42.61	27.19	15.92	14.97	349.98
2010	14.34	11.91	14.80	17.64	25.49	42.58	56.52	51.25	40.30	30.21	17.81	13.79	336.63
2011	10.59	9.93	10.24	14.99	26.01	28.97	36.12	37.01	33.29	20.31	11.46	11.34	250.23
2012	14.68	14.49	14.74	15.86	41.46	47.35	51.56	54.06	40.11	28.27	14.22	11.13	347.93
2013	10.76	10.85	15.62	19.67	28.95	35.24	40.17	37.98	38.06	25.79	19.53	14.03	296.65
2014	14.25	10.89	12.22	14.48	24.71	32.40	33.18	29.19	24.81	20.40	12.29	9.87	238.69
2015	9.78	8.90	12.89	15.73	19.69	22.80	23.32	23.11	20.41	20.66	11.45	10.26	198.99
2016	9.64	9.29	9.85	14.16	21.40	27.00							91.33
2017	9.69	8.74	10.51	11.46	25.25	31.02	35.90	34.72	29.89	23.80	11.54	10.72	243.25
2018	10.07	10.29	10.43	13.25	28.35	37.91	37.52	35.60	32.01	37.85	21.58	10.34	285.18
2019	9.64	8.74	9.96	12.83	21.30	27.60	37.69	37.64	26.91	21.50	17.25	10.94	242.01
2020	10.23	11.72	12.23	14.69	24.23	29.32	33.22	32.22	27.96	23.87	15.39	11.90	246.97
2021	10.70	9.42	11.67	19.40	31.43	34.24	32.74	29.88	26.91	20.70	11.69	11.75	250.54
2022	12.17	13.75	18.14	21.26	31.72	44.90	53.53	30.09	26.28	24.65	14.61	11.79	302.88
2023	11.10	10.07	11.30	13.14	21.28	29.36							96.25

Attachment 3

City’s Historical Water Meter Usage

Attachment 3. Water Usage Summary (2009-2022), CCF (Hundred Cubic Feet)

2009

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	8,083	7,350	9,927	16,500	23,414	25,505	35,618	37,780	18,857	18,874	10,227	9,228	221,363
Multi-family Residential	2,119	1,992	2,128	2,912	6,532	4,814	7,000	4,801	5,687	3,568	2,325	2,415	46,293
Commercial/Institutional	1,054	1,111	1,739	3,861	7,472	6,185	8,800	8,012	6,625	4,200	1,593	1,642	52,294
Industrial													
Landscape Irrigation	425	606	1,188	4,610	6,370	6,810	9,528	8,319	6,877	4,900	260	83	49,976
Other													
Agricultural Irrigation													
Total Usage	**11,681**	**11,059**	**14,982**	**27,883**	**43,788**	**43,314**	**60,946**	**58,912**	**38,046**	**31,542**	**14,405**	**13,368**	**369,926**

2010

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	6,697	7,166	8,751	10,414	15,873	27,029	32,958	28,545	29,383	22,301	9,303	9,784	208,204
Multi-family Residential	1,761	1,984	2,287	2,375	3,374	4,646	5,780	7,323	3,059	4,482	2,489	2,592	42,152
Commercial/Institutional	5,489	4,084	5,158	5,649	5,800	6,239	7,805	7,824	6,815	4,520	1,508	1,239	62,130
Industrial													
Landscape Irrigation	52	52	446	149	3,342	9,793	10,535	8,147	5,105	3,357	773	759	42,510
Other + Corp Yard													
Agricultural Irrigation													
Total Usage	**13,999**	**13,286**	**16,642**	**18,587**	**28,389**	**47,707**	**57,078**	**51,839**	**44,362**	**34,660**	**14,073**	**14,374**	**354,996**

2011

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	7,128	7,508	8,596	11,773	14,138	20,190	27,967	23,281		13,314			133,895
Multi-family Residential	2,138	2,064	2,201	3,035	529	3,826	4,852	5,596		5,551			29,792
Commercial/Institutional	1,155	1,022	1,302	2,347	4,736	9,921	7,548	7,930		3,567			39,528
Industrial													
Landscape Irrigation	217	268	209	1,911	4,667	5,773	6,694	7,340		1,591			28,670
Other													
Agricultural Irrigation													
Total Usage	**10,638**	**10,862**	**12,308**	**19,066**	**24,070**	**39,710**	**47,061**	**44,147**	**0**	**24,023**	**0**	**0**	**231,885**

2012

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	8,801	8,173	9,331	9,904	24,086	25,545	29,017	31,297	21,760	17,215	9,730	6,498	201,357
Multi-family Residential	2,374	1,930	2,353	2,330	3,758	9,517	4,448	4,690	6,745	3,014	1,990	2,990	46,139
Commercial/Institutional	1,244	2,294	1,647	1,283	6,536	7,347	8,520	9,641	3,170	4,439	1,143	912	48,176
Industrial													
Landscape Irrigation	719	794	519	573	5,508	6,177	7,261	8,583	7,284	4,066	880	786	43,150
Other + Corp Yard													
Agricultural Irrigation													
Total Usage	**13,138**	**13,191**	**13,850**	**14,090**	**39,888**	**48,586**	**49,246**	**54,211**	**38,959**	**28,734**	**13,743**	**11,186**	**338,822**

2013

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	8,141	8,660	10,743	15,206	25,598	24,414	30,074	29,939	20,479	19,265	12,201	9,927	214,647
Multi-family Residential	1,695	1,781	2,857	7,618	3,462	4,104	5,158	4,754	5,509	3,486	2,278	1,839	44,541
Commercial/Institutional	866	860	901	1,078	1,652	1,557	1,435	1,647	1,231	1,998	1,018	737	14,980
Industrial													
Landscape Irrigation	256	739	1,640	2,381	5,912	5,634	7,362	7,188	4,560	3,631	1,409	468	41,180
Other													
Agricultural Irrigation													
Total Usage	**10,958**	**12,040**	**16,141**	**26,283**	**36,624**	**35,709**	**44,029**	**43,528**	**31,779**	**28,380**	**16,906**	**12,971**	**315,348**

2014

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	10,615	7,322	8,516	11,965	20,910	24,142	27,836	21,499	18,526	15,833	8,345	8,566	184,075
Multi-family Residential	2,156	1,798	1,195	1,399	2,509	2,156	2,759	2,090	1,834	1,850	1,193	1,159	22,098
Commercial/Institutional	964	765	745	846	1,533	1,455	1,723	1,453	1,557	1,644	686	939	14,310
Industrial													
Landscape Irrigation	1,267	453	893	1,216	4,292	6,282	6,941	5,458	3,700	3,042	794	439	34,777
Other + Corp Yard													
Agricultural Irrigation													
Total Usage	**15,002**	**10,338**	**11,349**	**15,426**	**29,244**	**34,035**	**39,259**	**30,500**	**25,617**	**22,369**	**11,018**	**11,103**	**255,260**

2015

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	7,138	7,094	10,415	13,263	13,705	17,027	19,530	17,708	16,225	14,891	8,573	8,664	154,233
Multi-family Residential	979	1,032	1,132	1,675	1,646	1,740	2,222	4,154	2,173	2,729	1,798	1,746	23,026
Commercial/Institutional	580	591	748	971	1,042	1,078	1,259	1,192	1,274	1,749	832	1,060	12,376
Industrial													
Landscape Irrigation	230	243	881	2,846	2,902	3,804	4,220	3,768	3,559	3,337	537	343	26,670
Other													
Agricultural Irrigation													
Total Usage	**8,927**	**8,960**	**13,176**	**18,755**	**19,295**	**23,649**	**27,231**	**26,822**	**23,231**	**22,706**	**11,740**	**11,813**	**216,305**

2016

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	7,098	7,186	8,916	10,588	15,095	19,780	23,934	21,877	21,153	11,816	8,161	9,092	164,696
Multi-family Residential	1,627	1,773	1,973	1,939	2,431	2,874	3,609	3,723	3,246	2,394	2,023	1,997	29,609
Commercial/Institutional	716	755	790	748	1,114	1,208	1,528	1,658	1,635	1,414	993	1,020	13,579
Industrial													
Landscape Irrigation	211	279	289	2,860	4,441	5,510	7,228	6,398	6,062	2,228	573	419	36,498
Other + Corp Yard													
Agricultural Irrigation													
Total Usage	**9,652**	**9,993**	**11,968**	**16,135**	**23,081**	**29,372**	**36,299**	**33,656**	**32,096**	**17,852**	**11,750**	**12,528**	**244,382**

2017

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	5,436	7,100	8,853	8,231	17,487	20,101	27,825	23,368	22,639	15,889	8,340	8,737	174,006
Multi-family Residential	1,252	1,546	1,937	1,714	2,552	3,009	3,583	3,247	3,164	2,408	1,524	1,919	27,855
Commercial/Institutional	749	993	1,017	1,016	1,088	1,235	1,775	1,567	1,893	1,659	809	997	14,798
Industrial													
Landscape Irrigation	359	279	821	1,033	4,835	5,447	6,831	6,428	7,009	4,278	456	387	38,163
Other													
Agricultural Irrigation													
Total Usage	**7,796**	**9,918**	**12,628**	**11,994**	**25,962**	**29,792**	**40,014**	**34,610**	**34,705**	**24,234**	**11,129**	**12,040**	**254,822**

2018

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	8,736	6,693	6,968	8,215	9,330	16,372	22,723	22,959	24,148	16,619	24,148	19,764	186,675
Multi-family Residential	1,919	1,463	1,532	1,751	1,617	2,193	3,436	3,766	4,254	3,313	4,254	2,624	32,122
Commercial/Institutional	991	931	943	1,079	773	854	819	904	906	1,006	906	874	10,986
Industrial													
Landscape Irrigation	51	17	69	397	1,028	5,735	7,383	6,883	6,514	4,223	6,514	694	39,508
Other + Corp Yard													
Agricultural Irrigation													
Total Usage	**11,697**	**9,104**	**9,512**	**11,442**	**12,748**	**25,154**	**34,361**	**34,512**	**35,822**	**25,161**	**35,822**	**23,956**	**269,290**

2019

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	7,915	6,125	7,639	6,809	12,933	18,126	21,252	26,719	24,593	18,410	16,294	12,486	179,302
Multi-family Residential	1,393	1,413	1,413	1,352	1,963	2,273	6,836	3,449	4,035	2,362	2,364	2,674	31,528
Commercial/Institutional	662	941	688	956	791	884	957	949	955	1,192	1,332	551	10,858
Industrial		0	0	0	0	0	0	0	0	0	0	0	
Landscape Irrigation	125	57	47	28	812	2,214	4,292	8,711	3,106	1,177	802	586	21,956
Other													
Agricultural Irrigation													
Total Usage	**10,094**	**8,536**	**9,787**	**9,146**	**16,499**	**23,497**	**33,337**	**39,828**	**32,689**	**23,141**	**20,792**	**16,297**	**243,643**

2020

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	8,446	6,747	9,553	12,261	19,764	28,332	33,971	13,714	20,190	9,853	16,686	10,345	189,862
Multi-family Residential	1,448	1,251	1,840	2,120	2,624	3,991	5,784	1,355	3,432	2,379	4,223	2,101	32,548
Commercial/Institutional	479	457	539	560	874	776	875	356	917	432	1,419	545	8,229
Industrial													
Landscape Irrigation	120	63	296	361	694	3,359	2,432	1,896	3,597	117	1,803	515	15,253
Other + Corp Yard													
Agricultural Irrigation													
Total Usage	**10,493**	**8,518**	**12,228**	**15,302**	**23,956**	**36,458**	**43,062**	**17,321**	**28,136**	**12,781**	**24,131**	**13,506**	**245,892**

2021

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	8,852	7,048	8,721	9,164	9,690	10,529	8,459	21,678	4,358	10,309	8,999	8,138	115,945
Multi-family Residential	1,157	714	1,102	2,386	1,281	423	1,781	1,727	894	2,627	2,354	1,488	17,934
Commercial/Institutional	1,255	495	649	5,163	535	5,533	2,820	6,638	661	3,261	1,208	992	29,210
Industrial													
Landscape Irrigation													
Other + Corp Yard	157	6	104	291	2,107	63	113	2,604	10	992	141	88	6,676
Agricultural Irrigation	216	288	258	2,617	3,133	7,630	6,625	3,321	253	641	453	364	25,799
Total Usage	**11,637**	**8,551**	**10,834**	**19,621**	**16,746**	**24,178**	**19,798**	**35,968**	**6,176**	**17,830**	**13,155**	**11,070**	**195,564**

2022

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Single Family Residential	6,926	8,906	9,218	12,076	14,259	20,324	20,507	21,218	18,248	14,042	10,632	7,730	164,086
Multi-family Residential	1,157	1,582	2,009	2,173	2,327	2,582	3,222	3,477	2,970	2,381	2,091	1,286	27,257
Commercial/Institutional	828	2,169	2,465	3,684	5,704	6,158	7,373	6,311	6,284	5,692	1,774	916	49,358
Industrial													
Landscape Irrigation													
Other + Corp Yard	160	594	1,502	492	736	1,231	2,027	2,260	2,233	915	341	53	12,545
Agricultural Irrigation	86	882	460	477	3,847	5,719	7,819	1,266	2,373	887	462	519	24,797
Total Usage	**9,157**	**14,133**	**15,654**	**18,902**	**26,873**	**36,014**	**40,948**	**34,532**	**32,108**	**23,917**	**15,300**	**10,504**	**278,043**

Attachment 4

City Fire Storage Sizing Policies: Fire Chief Memo and General Plan

Wheatland Fire Authority

P.O. Box 119 313 Main Street Wheatland, California 95692
Telephone (530) 633-0861 Fax (530) 633-8215 www.wheatlandfireauthority.com

May 9, 2019

Mr. Dane H. Schilling, PE
City Engineer
City of Wheatland

RE: City of Wheatland – Fire Storage

Dear Dane,

It is the recommendation of the Wheatland Fire Authority that fire modeling criteria for the purposes of calculating storage and fire hydrant flows shall be modified to require analysis of one commercial fire or two simultaneous residential fires, whichever is the more restrictive scenario. All other design criteria including flow and pressure utilized shall be in conformance with the California Fire Code and City requirements.

This recommendation is in general conformance with standard practice in the local area and my professional experience. If you have any questions, please contact me to discuss. Thank you.

Sincerely,

Art Paquette
Fire Chief
Wheatland Fire Authority

Cc: Jim Goodwin, City Manager
Laurie Loaiza, P.E., Senior Engineer

Fire Loss Data

The Department does not maintain fire loss records. These records would provide estimates of the losses calculated after a fire has been suppressed (i.e., "mitigation"). Fire loss data should be collected because it is one measure of the effectiveness of emergency response along with the adoption and effective enforcement of building codes and standards and other loss prevention ordinances and programs.

Emergency Response Planning

Both fire departments maintain emergency plans of their own design. They contain basic information, such as command structure, important telephone numbers, locations of staging areas, and traffic, crowd control, and evacuation information. These agencies are part of the Yuba County Operational Area (OA). Emergency response plans should be consistent with federal guidance or the State of California's Standardized Emergency Management System (SEMS).

The Department provides fire prevention and CPR education at elementary and day schools. Annual fire inspections are conducted at business sites and at residences upon request. The Department also provides standby general safety and emergency medical services at local high school football games.

The Water System and Fire Suppression Delivery Capabilities

The City of Wheatland maintains a water system capable of supplying approximately 1,035,000 gallons of water per day for domestic purposes. The City estimates its current average water usage per day for non-fire flow purposes is approximately 504,000 gallons.

Water is supplied by six wells, a 97,000-gallon elevated water tower to insure adequate pressure, and a 667,000 gallon on-grade water tank, delivering approximately 600,000 gallons of usable water for fire flow. Water is obtained from wells with pump capacities ranging from approximately 550 to 800 gpm. Additional wells are in the planning stage. The City's six wells are capable of pumping 4,600 gpm. Three wells are provided with emergency power to insure fire flows and are capable of automatically going on line to pump 2,500 gpm. The well in the Public Works Corporation Yard has emergency power supplied by natural gas, and the wells at Wheatland Ranch and Park Place have emergency power supplied by diesel fuel.

Water System Design for Fire Protection

Water systems are designed to meet the requirements of generally accepted engineering principles for domestic water flow (non-fire flows), and they should be designed to provide fire flows above the maximum daily use. The ISO and the UFC are common references for determining fire flow requirements, which normally are calculated to provide uniform flows to specific areas and to specific buildings within the same areas.

Nevertheless, the provision of water alone does not insure safety from fire. Rather, the water system is an essential component of the community's fire protection infrastructure that also includes response capabilities, building design and construction controls, public education, access, and other preventive measures. There always will be circumstances in which emergency response resources can be overwhelmed regardless of the amount of available water. For instance, vegetation fires have overwhelmed firefighting resources and water supplies in urban/wildland interface areas.

The determination of water resources requires a careful analysis of risk and cost. In light of the UFC's requirements and general conditions within the city of Wheatland, the policy decision to establish the strategic needs of the water system is fairly straightforward. Design considerations need to consider many factors, but for fire protection purposes, the water system should be entirely looped with no dead-end mains and be capable of supplying the recommended fire flows with at least 20 pounds per square inch of residual pressure in addition to meeting the community's maximum daily usage of 1,000 GPM.

Automatic fire extinguishing systems (AFS) provide greater environmental protection because they use less water to extinguish a fire than application of water by fire hoses. This results is less water runoff into storm drains and less percolation into the ground that contain toxic and hazardous materials involved in the fire or form byproducts of combustion

The model used to establish current fire hydrant flows is 750 gallons per minute (GPM) considering two concurrent fires, or 1,500 GPM and 2,500 GPM for commercial zones. It is recommended that fire flow be based upon a concurrent residential fire (1,000 GPM minimum) and commercial fire (3,500 GPM) assuming all buildings will be protected by AFS with flow alarms monitored on a 24/7 basis.

An important factor for the City to consider in planning its water system is that if the fire flow for commercial areas is not increased by 3,500 GPM in all commercial areas, particularly areas of proposed development, the type and size of buildings permitted by zoning regulations may be restricted.

If the City controls the interface between buildings and open space (especially regarding combustible vegetation), the residential areas within the city of Wheatland can be considered moderate hazard zones as defined by the Uniform Fire Code. Where combustible building interfaces are not regulated, the UFC calls for increased fire flows of 2,500 gpm or greater, as established by the local fire chief. Residential areas should have a minimum fire flow of 1,500 gpm unless buildings are protected by sprinklers, in which case the fire flow can be 1,100 gpm.

Fire Hydrant Standards

Although the City has not adopted the Uniform Fire Code, it appears that water system engineers have applied the code's basic rules applying to fire hydrants. The UFC specifies that the minimum number of fire hydrants to assure fire flows of 3,500 gpm shall be a minimum of four hydrants spaced 350 feet apart; and for fire flows of 1,000 to 1,500 gpm there shall be a minimum of two hydrants spaced 450 feet apart. These hydrants are required to be within a range of 180 to 225 feet of any point on a street or road frontage and no further than 150 feet from a structure that needs to be protected.

Water Storage

Fire flow needs are calculated assuming two concurrent fires, one residential and one commercial. This fire flow calculation is in addition to the storage needed to maintain maximum daily use for non-fire uses plus a reserve capacity of approximately 20%.

TABLE 5-6
WHEATLAND WATER STORAGE AND PUMP CAPACITY FOR FIRE FLOWS

Water Storage/Use	**Gallons of Water**
Current Storage (2 Tanks)	600,000
Fire Flow of 3,500 gpm at 3 hrs.	630,000
Fire Flow of 1,500 gpm at 2 hrs. (120,000 gpm if AFS* required)	180,000
Reserve Storage of 20%	198,000
Amount maintained for Max. Daily use (1,000 gpm for 3 hours)	180,000
Total Minimum Storage Equivalent	**1,188,000**
Storage Deficiency	588,000
Less Emergency Pump Capacity 2,150 gpm(2,150 gpm at 3 hrs.)	387,000
Deficiency in delivering anticipated fire flow	201,000**

*AFS = automatic fire sprinklers

**This deficiency can be made up by placing additional wells on-line or by providing one or more of the existing three wells with automatic on-line pumping capabilities and emergency power. ROA encourages greater amounts of above ground storage as a dependable source of water for Fire Protection use rather than use of pump capacity.

Source: Robert Olson Associates, 2004.

5.7 | PARKS AND RECREATION

The city of Wheatland has four public parks. City Park and Tomita Park are located in downtown Wheatland in the SR 65/UPRR corridor, while the two other parks are located in the Park Place and Wheatland Ranch subdivisions.

- City Park is the largest park, occupying 3.8 acres on the east side of SR 65 between C Street and the Union Pacific tracks. Most of City Park is occupied by a little league baseball diamond (Tom Abe Field).

- Tomita Park occupies a quarter-acre site in downtown, and is located along the Union Pacific tracks on the west side of Front Street, the location of the city's original train depot. Tomita Park is landscaped with turf and large trees, and includes benches, a gazebo, and a plaque commemorating the Johnson's Rancho historical landmark.

- The Park Place subdivision contains a landscaped park occupying approximately two acres, as well as open space totaling approximately 4.2 acres. Most of this open space is taken up by a drainage channel.

Attachment 5

DDW Annual Inspection for Fiscal Year 2015-2016

CALIFORNIA
Water Boards

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

State Water Resources Control Board
Division of Drinking Water

RECEIVED
APR 27 2016
CITY OF
WHEATLAND

April 18, 2016

City of Wheatland
P.O. Box 395
Wheatland, CA 95692

Attention: Larry L. Panteloglow, Sr., Public Works Director

Subject: City of Wheatland, Public Water System No. 5810004 – Fiscal Year 2015-2016 Annual Inspection

On April 14, 2016, Paul Rowe of my staff met with you, Don Scott, Terrence Hill, and Josh Tarrant to conduct an annual inspection of the City of Wheatland public water system. The City's water system appears to be generally well maintained and operated. No deficiencies were noted during the inspection. Please see the enclosed report for further information.

If you have any questions or comments concerning this inspection, please call Paul Rowe at (530) 224-4866, or myself at (530) 224-4861.

R Crenshaw
Reese Crenshaw, P.E.
Valley District Engineer
Drinking Water
Field Operations Branch

Enclosures

Attachment F - DDW Annual Inspection

State Water Resources Control Board
Division of Drinking Water
Annual Inspection Report

Purveyor *City of Wheatland* System Number *5810004*
Person(s) Contacted/Position *Larry Panteloglow, Sr. (Director); Don Scott (Superintendent)*
Date of Inspection *April 14, 2016* Reviewing Engineer *Paul Rowe, P.E.*
Previous Annual Inspection *April 1, 2015 by Dan Cikuth, P.E.* District Engineer *Reese Crenshaw, P.E.*

A. INTRODUCTION

1. Permit Status (Date Issued/Amendment Purpose)

Full: *A water permit was issued to the City on January 22, 1954, for the 70,000-gallon (nominal) elevated storage tank (old Southern Pacific RR water tank) and old wells that existed at that time. The old wells have been destroyed.*

Amendment(s): *November 21, 1962 for Well 5 (Town & Country Garden Subdivision)*
February 28, 1995 for Well 6 (high school well).
February 12, 2001, for new Well 4 (next to police station)
January 28, 2003 for new Well 3 (corp yard), new Well 7 (Forecast homes), and new 660,000 bolted steel ground water storage tank with booster station.
February 4, 2004, for Well 8 (Wheatland Ranch)
October 2012, for continuous chlorination

Are the permit provisions complied with? *Yes.*
Is the permit up to date? *Yes.*
List data sheets on file (permit, files, etc.): *Well data sheets, reservoir data sheets, and a distribution data sheet are in the permit file.*

2. Changes in System

Since last annual inspection: *Well #3 was rehabilitated (new column, shaft, bearings and impellers. Cleaned well screens and motor rewound with new bearings and ratchet assembly). The SCADA integration plan has been completed.*

Planned future changes: *The City is waiting on the availability of the developer (Louis Homes) to get started with the Heritage Oaks East subdivision. This may not happen until late 2016 to 2017. The first phase will be the construction of one new well and a 600,000 gallon storage tank. The second phase involves the construction of an additional well and a 1.2 MG storage tank. As finances provide, the City plans to rehabilitate Well #8, then Well #4. The City will also replace one or two more Hach Cl-17 chlorine analyzers with Analytical Technology Inc.'s Model Q46H. Because water usage has dropped almost 35% since 2013, the City is looking to increase water rates in order to continue funding the normal operation and maintenance of the water system.*

3. Consumer & Production Data *(from 2015 Annual Report)*

Number of service connections *1,186* Number with meters *1,186*
Approximate population served: *3,437*
Water produced during recent 12-month period (January – December 2015) *199.1 MG*
Maximum month: *23.32 MG (July 2015)* Maximum day: *1.356 MG (October 5, 2015)*

4. Past Water Production Data

Table 1 – Water Use Data**

Year	Max. Month MG	Max. Day x1.5 gpm	Report Max. Day MG	Max. Day gpm	Total Conn.	GPM PDPC	Meter Conn.	Flat Conn.	Source Capacity gpm	Max. Pop.
2004	*62.1*	*2,087*	*2.46*	*1,708*	*1,198*	*1.43*	*1,198*	*0*	*4,050*	*3,194*
2005	*49.0*	*1,647*	*2.18*	*1,514*	*1,198*	*1.26*	*1,198*	*0*	*4,050*	*3,432*
2006	*46.5*	*1,563*	*1.71*	*1,188*	*1,216*	*0.98*	*1,216*	*0*	*4,050*	*3,422*
2007	*44.5*	*1,495*	*1.66*	*1,153*	*1,205*	*0.96*	*1,205*	*0*	*4,050*	*3,580*
2008	*41.6*	*1,398*	*1.69*	*1,174*	*1,205*	*0.97*	*1,205*	*0*	*4,050*	*3,510*
2009	*38.9*	*1,307*	*1.45*	*1,007*	*1,258*	0.80	*1,258*	*0*	*4,050*	*3,500*
2010	*39.8*	*1,337*	*1.89*	*1,313*	*1,258*	1.04	*1,258*	*0*	*4,050*	*3,548*
2011	*37.0*	*1,243*	*1.56*	*1,083*	*1,258*	0.86	*1,258*	*0*	*4,050*	*3,469*
2012	*38.6*	*1,340*	*1.607*	*1,116*	*1,258*	0.89	*1,258*	*0*	*4,050*	*3,469*
2013	*40.17*	*1,350*	*2.009*	*1,395*	*1,258*	*1.11*	*1,258*	*0*	*4,050*	*3,456*
2014	*33.18*	*1,115*	*1.288*	*894*	*1,258*	*0.89*	*1,258*	*0*	*4,050*	*3,495*
2015	*23.32*	*784*	*1.356*	*942*	*1,186*	*0.79*	*1,186*	*0*	*4,050*	*3,437*
				5 Year	***Avg***	***= 0.91***				

***The water system has extensive SCADA capability, including a historian. Max day production is used to calculate flow per service connection per day.*

Discussion & appraisal: *The maximum day demand (MDD, the highest daily demand in past 10 years) is 1,647 gpm (2005), based on reported maximum day for each year. The peak hourly demand (PHD = 1.5 x MDD) is 2,471 gpm. MDD and PHD are defined in the California Drinking Water Regulations, specifically T22 CCR §64554. This section of the regulations requires that MDD be met by sources alone and that four hours of PHD be met by a combination of sources, storage, or interties. The City of Wheatland water system has sufficient source capacity alone (4,050 gpm) to meet both MDD and PHD.*

Average demand per service connection averaged 0.91 gpm/sc/day during the past five years. This is within the expected range.

B. SOURCE DATA

Table 2 – Source Data

Well	Capacity (gpm)	Location	Auxiliary Power	Comments
Well 3	*750*	*Corp. yard*	*yes – generator runs control room and well facility*	*30 HP motor; water lube; constructed 1989; in-well sand separator*
Well 4	*650*	*By police sta.*	*no*	*50 HP motor; water lube; constructed 2000; sand separator*
Well 5	*670*	*Town & Garden Subdivision*	*yes – generator on wheels*	*50 HP motor; water lube; constructed 1962; sand separator*
Well 6	*650*	*East side of high school*	*no – but well has quick connect*	*50 HP motor; water lube; constructed 1960; sand separator*
Well 7	*480*	*Forecast Homes Subdivision*	*yes – generator mounted on slab*	*40 HP motor; water lube; constructed 2001; in-well sand separator*
Well 8	*850*	*Wheatland Ranch Subdivision*	*yes – generator on wheels*	*60 HP motor; water lube; constructed 2003; in-well sand separator*
Total	***4,050***			

Discussion & appraisal (i.e., does source capacity comply with Waterworks Standards?) *Source capacity complies with the California Waterworks Standards (see discussion under Section A.4., above). Well sequence rotated via SCADA. Wells 4 through 8, each with a pressure tank, pump directly to the distribution system. Well 3 pumps only to Tank 2 (660,000-gallon, ground-level, bolted steel). All of the wells are controlled by the water level in Tank 2. The Tank 2 booster pumps are controlled by the water level in Tank 1 (elevated, 70,000-gallon), which provides a constant system pressure. An automatic valve prevents the booster pumps from filling Tank 2. Tank 1 can be filled from the distribution system when the booster pumps are on but not when the booster pumps are off.*

Well #7 has been offline since 2015 because the chlorine residual could not be maintained in the hydro tank receiving Well #7 water. The City is still investigating this problem further once the higher priority wells are rehabilitated.

C. TREATMENT

1. Surface Water Sources *There are no surface water sources.*

2. Groundwater Sources

Is continuous disinfection provided? *Yes. Sodium hypochlorite (12.5%) feed systems are present at all the wells to minimize the chance of Total Coliform Rule violations.*

Describe facilities: *PULSAtron® Series E pumps (6.31 Lph) meter chlorine into the system. Usage (gallons/day) and concentration (mg/L) of chlorine are logged daily.*

Discussion & appraisal: *Chlorine analyzers have been installed at each well site and are connected to SCADA. The SCADA historian calculates and stores, for one year, the daily average chlorine residual leaving each well site. These values are hand entered into an Excel spreadsheet on a regular basis. Chlorine residuals in the distribution system are typically 0.5 to 0.7 mg/L.*

3. Other Treatment or Blending Facilities

Describe facilities & parameters treated/blended (i.e. iron, & manganese, fluoridation, nitrate, corrosion control, organics, etc. *There are no other treatment or blending facilities.*

4. Describe Records Maintained of Treatment

The following information on each well is recorded daily, tabulated, and submitted monthly to the Division: total daily production (system), run time and production (each well), average daily chlorine residual (each source), estimated chlorine used, four daily distribution chlorine residuals, main-tank daily average chlorine residual, and monthly maximum static water levels. Comments are provided, as needed.

D. STORAGE DATA

Table 3 – Storage Data

Name	Type	Capacity (gal.)	Zone	Comments
Tank 1	*Elevated*	*70,000*	*1*	*Tank 1 level determines system pressure. Constructed 1904; modified 1948 (wood tank replaced with steel; same support structure). Located at 4th & A Streets (same as Tank 2). Common inlet outlet.*
Tank 2	*Ground level – bolted steel*	*660,000*	*1*	*Single pressure zone established at level of elevated tank. Tank 2 needed to meet fire flow. Constructed summer of 2002.*
	Total	***730,000***		

Does storage capacity comply with Waterworks Standards? *Yes; see discussion in Section A.4.*

Are all data sheets completed & on file? *Yes. Tank data sheets are in the permit file folder. The Tank 1 data sheet is in the 1962 "Report of Sanitary Engineering Survey." The Tank 2 data sheet is in a bound copy of Permit Amendment 10-18-962A3, January 2003, which also includes domestic and fire booster station data sheets.*

Are DDWEM coating procedures adhered to? *Yes.*

Discussion & appraisal (i.e., were reservoirs coated, cleaned &/or inspected last year? Plans for recoatings, cleanings &/or inspections? *Tanks are inspected every three to four years. Both the elevated storage tank (Tank 1) and the ground level storage tank (Tank 2) were inspected, cleaned, and repaired with epoxy in 2013. Neither tank has cathodic protection. Both tanks will possibly be inspected and cleaned again during the fall of 2016.*

E. TRANSMISSION FACILITIES

Describe transmission facilities *There are no transmission facilities. The sources are distributed throughout the service area, making transmission mains unnecessary.*

Are there low head lines? *No.*

Discussion & appraisal *N/A.*

F. DISTRIBUTION SYSTEM

1. Pressure Zones

Table 4 - Pressure Zone Data

Pressure Zone Name	Pressure Range	Pressure Sources	Storage Capacity
One pressure zone	*49 to 51 psi*	*Wells 4 through 8; Tank 1, and Tank 2 booster stations.*	*0.73 MG*

2. Booster or Reducing Stations *The ground-level, bolted-steel tank (Tank 2) has a booster station with four pumps. Three of the pumps are dedicated to domestic supply. Two have a capacity of 450 gpm and a new one is 800 gpm (1,700-gpm total). Fire flow is provided by one 75 HP pump with a capacity of 2,000 gpm.*

3. Mains

Table 5 – Distribution System Materials

Material	Amount (%)	Size	Condition	Comments
Asbestos cement	*40*	*6 & 8-inch*	*good*	
Cast or ductile iron	*< 1*	*6-inch*	*fair*	
C900 PVC	*60*	*6 to12-inch*	*new*	*Material of choice for new mains.*

4. Discuss leak history during past 12 months (mains & connections)

According to the 2015 Annual Report, there were 9 service connection breaks/leaks and 1 main leak. All were repaired. No other problems were reported.

5. Are Distribution facilities constructed in accordance with Waterworks Standards?

Yes, in accordance with the Waterworks Standards in effect at the time.

6. **Describe water main & sewer line separation practices**

   Division criteria are followed.

7. **Extent of lead pipes, joints, or lead solder used in distribution system**

   There are no known lead pipes, joints or solder in the system.

Discussion & appraisal *The distribution system is said to be in very good condition. Much of it is new or replaced from 2003 to 2005.*

G. WATER QUALITY & MONITORING

1. **Bacteriological Monitoring**

   Description of program *Under the Total Coliform Rule, the City collects 5 monthly routine distribution samples from 15 sample sites, 9 of them dedicated sampling stations. A single sample is collected on the first, second, and third Tuesdays of each month. Two samples are collected on the fourth Tuesday. Samples are analyzed at the Yuba City, ELAP-certified laboratory.*

   Sampling plan approved & current (do we have a copy?) *Yes*

   Controlling factor is population or service connections? *Both*

   Number of samples per month or week required? *Four (4) per month.*

   MCL violations in past year? *No.*

   Discussion & appraisal *One positive routine distribution sample was detected in May 2015, but all repeat samples were non-detect. Also raw water sampling was not consistent in 2015. The City stated that quarterly bacteriological raw water sampling is to done in February, May, August, and November.*

2. **Chemical Monitoring**

   Description of program *The City uses the Division's online monitoring schedules and communicates with the Division as needed to verify accuracy of these monitoring schedules. Yuba City Lab is used for sample analysis unless samples are subbed out by the lab.*

   Who collects samples? *Samples are collected by water system operators.*

   Discussion & appraisal *Almost all chemical sampling is up to date except for the following constituents that are overdue: Well 7 – Gross Alpha (due July 2015), Well 8 – Total Chromium (due November 2010). The monitoring schedule for these delinquent items is attached to this report.*

3. **Other Organics**

   Description of program *No special organic sampling is required at this time.*

   Discussion & appraisal *N/A.*

4. **Disinfection By Products**

   Description of program *Due to low (nondetect) results, the City qualified for reduced (triennial) Stage 1 DBPR monitoring in 2004. A signed Stage 2 DBPR sampling plan was submitted to the Division in 2013. The plan requires the City to annually collect dual DBP samples at West End Main Street. The City failed to conduct Stage 2 DBPR sampling in 2014, but a dual sample was taken in July of 2015. Both samples were well below the MCL.*

   Discussion & appraisal *Sampling is up to date*

5. **Additional Monitoring**

   Description of program (Physical quality of distribution system, corrosion, lead & copper monitoring, etc.) *The most recent lead and copper samples were collected on July 23, 2014, resulting in 90th percentile values of 0.004 mg/l and 0.350 mg/L for lead and copper, respectively. Each of the 90th percentile values are below respective action levels. Forty (40) samples were collected, which exceeds the required number of 20 samples. The next lead and copper sampling is due by no later than September 30, 2017.*

6. **Is an approved water quality monitoring plan on file?** (i.e., briefly summarize plan & needed additions) *There are less than 10,000 service connections; therefore, a water quality monitoring plan is not required.*

H. OPERATION & MAINTENANCE

1. Planning & Personnel

Are system improvements made in accordance with the Waterworks Standards?
System improvements are reportedly made in accordance with the Waterworks Standards.

Does the utility have up-to-date distribution system maps? *Yes.*

Is up-to-date copy of system schematic on file? *No. Please Submit.*

What is the minimum grade requirement? *A minimum Grade D2 Certified Distribution Operator is required. The water system grade requirement and individual operator certifications were confirmed on April 1, 2015.*

Table 6 – Personnel

Name	Distribution Grade	Treatment Grade
Larry L. Panteloglow Sr.	*D2*	*T2*
Donald R. Scott	*D2*	*T2*
Terrence Y. Hill	*D1*	---
Josh P. Tarrant	*D1*	---

2. Cross-Connection Control Program

Name of cross-connection control inspector(s) *Don Scott is the cross-connection control coordinator who is responsible for over-seeing that testing is completed. In years past, backflow devices were tested by Bill's Backflow Service, but now this serviced is performed by the City. Test certifications and other information are filed in folders according to year. The Public Works Director makes the decision if, and what type of back flow prevention device is required for new or existing connections.*

Is there a copy of the cross-connection control ordinance on file? *Yes. A copy of the City's ordinance (Title 13 Public Services; Division II, Water; Chapter 13.52 Cross-connection Control) was downloaded from the Internet and placed in the case file on 6/27/12.*

Discussion & appraisal *There were 41 backflow devices reported for 2015. 41 devices were tested, and 2 were repaired or replaced.*

3. Complaints

Table 7 – Complaints Summary (2015)

Type	Number	Comments
Taste and Odor	*0*	
Color	*0*	
Turbidity	*0*	
Worms and Other Visible Organisms	*0*	
Pressure - (High or Low)	*1*	*Incident after service connection*
Illnesses - (Waterborne)		
Other	*0*	
Total	*1*	

Discussion & appraisal *Customer complaints are received at the City offices and a service request is emailed to Don Scott. Complaints are normally addressed the same day. Resolved complaints are filed by Don and tracked on spreadsheet software.*

4. Emergency Response

Is an up-to-date emergency notification plan on file? *Yes. The ENP is dated April 23, 2014.*

Emergency response plan *An Emergency Response Plan was received by the Division on 1/25/06. A Vulnerability Assessment, dated 1/19/06, was completed and submitted to federal EPA.*

Notification of DDWEM of significant system problems *Communications between the water system and the Division have historically been very good.*

Discussion & appraisal *The City has met its obligations under emergency preparedness and emergency response regulations.*

5. Main Disinfection Program

Describe main disinfection program (i.e., method, contact time, chlorine residual, bacteriological tests, records) for new & repaired mains *The City uses the tablet method to disinfect water mains. Contractors hired by the City use both the tablet method and the chlorine injection method of disinfection. Most distribution issues involve service lines and not water mains.*

Does the main disinfection program comply with AWWA specifications? *Yes.*

Discussion & appraisal *In compliance.*

6. Valve Maintenance Program

Describe program *There are about 237 valves in the system ranging from six to twelve inches in diameter. The City purchased a valve turning machine in 2014. According to the City's 2015 electronic annual report, forty (40) valves were exercised in 2015. The goal is to exercise each valve every two years.*

Are number & location of valves satisfactory? (i.e., mainline, ARVR, blowoff valves, etc.) *The recent rebuilding of the distribution system included a sufficient number of valves to isolate individual streets.*

Discussion & appraisal (e.g., are valves recorded on maps available to field crews? Are all valves located with valve covers raised to grade?) *Yes.*

7. Flushing

Describe flushing program (i.e. dead-ends, records, etc.) *Fire hydrants and dead-ends are flushed semi-annually. Flushing progresses from the storage tanks out to the perimeter of the distribution system.*

Approximate number of dead ends *19* Percent with flushing valves *100* %

Discussion & appraisal *The City flushed all dead ends in 2015 and is planning to do so in 2016.*

8. Supervisory Control and Data Acquisition (SCADA) System

Discussion & appraisal *The City's newly integrated (as of 2015) SCADA system allows operators to observe and control conditions in the distribution system including at individual well sites, storage tanks, and booster pumps. Observable and/or controllable parameters include pressure, chlorine residual, flow rate, on/off status, lead/lag and start/stop settings (wells), water level, etc.*

9. Backup Power & Alarm Systems

Discussion & appraisal *Four of the six wells have back-up power, providing sufficient flow (2,750 gpm) to meet MDD (1,647 gpm) and PHD (2,471 gpm) during an electrical outage. Alarms are provided based on pressure, chlorine residual, flow, failure to start, and water levels (high/low). When an alarm goes off, the duty operator is called. The operator can access SCADA remotely via a laptop computer.*

I. OVERALL SYSTEM APPRAISAL

The City water system appears to be well operated and maintained by State certified staff who are up to date in continuing education and certification requirements. Operators are assisted by a SCADA system that enables *remote observation and control of critical system functions. Water quality is excellent, and multiple generators allow for uninterrupted supply of potable water.*

Report by: Paul J. Rowe, P.E.

Paul Rowe 4-15-2016

Signature Date

Enclosures

1) Chemical Monitoring Deficiency Record

Appendix G

TECHNICAL REPORT
SANITARY SEWER

HERITAGE OAKS EAST ESTATES
SEWER SYSTEM MASTER PLAN

Prepared by:

MHM Incorporated
1204 E Street, P.O. Box B
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June 30, 2023

1.0 Sanitary Sewer

1.10 Introduction

The purpose of this sewer study is to identify the backbone sewer conveyance facilities for the Heritage Oak East Subdivision and stub to the adjacent Heritage Oaks West Subdivision. This report is part of an overall high-level infrastructure analysis for the plan area. This study will demonstrate it is possible to provide sewer service for the project and technical compliance with the sewer district's requirements for sewer conveyance. The project falls within the jurisdiction of the City of Wheatland.

Existing sewer conveyance facilities border the project to the north, northeast, west, and south. A sewer force main actually flows through the western portion of the property to the existing wastewater treatment plant located on south boundary. It is anticipated that these facilities will be extended to provide sewer service to the project area. Some improvement will be required to be extended to the existing wastewater treatment plan toward the buildout of the project area. This study has been prepared to present the project's ultimate build out sewer conveyance facilities for the plan area and also a trunk line through the property to serve the Heritage Oak West Project. The study includes backbone trunk and collector mains to serve each proposed land use. This study includes a discussion on the proposed project, sewer, flows, alignments, and sewer facilities.

As part of the Heritage Oaks East Subdivision, a sanitary sewer system is required for the proposed project area. The sanitary sewer generated on the site will be directed to City of Wheatland existing Malone Sewer Pump Station. The City has plans to upgrade the sewer pump station and to increase capacity to handle the entire Heritage Oak Area. The City of Wheatland's long-term plan is to use the Malone Sewer Pump Station as the collection for the entire western side of Wheatland then pump to the OPUD wastewater treatment plant. The OPUD Plant is located in Olivehurst near Mary Avenue about 10.6 miles along the proposed force main alignment. The City of Wheatland and OPUD are in the process of designing a conveyance system and treatment plant upgrade to allow this to happen. The proposed Heritage Oaks East Subdivision will generate approximately 1.56 MGD Average Dry Weather Flow. The OPUD plant is currently permitted for 5.1 MGD of Average Dry weather Flow.

The study area is for Heritage Oak East Estate project. The Heritage Oak East Project is located south of Grass Hopper Slough and west of State Route 65 in the City of Wheatland. The area within its boundary comprises about 175.0 acres (0.26 square miles). The Heritage Oak East Project consists of 114.3 acres of low-density residential lots, 7.0 acres medium high density residential, 14.2 acres of community commercial, 5.1 acres light industrial (self-storage), 2.8 acres of open space, 7.5 acres of detention pond/park, 10.3 acres of park, 5.1 acres of levee right of way and 8.9 acres of roads and circulation. Figure 1-1 provides a location map of the Heritage Oak East Project.

1.20 Goals of the Analysis

This Pre-Design Analysis has been prepared for use as an aid in determining new sewer infrastructure. The intent of this analysis is to review and to assess existing information and to determine possible infrastructure improvements. The goals of the analysis are as follows:

- Collect and review existing infrastructure
- Determine the geometric and hydraulic design parameters
- Prepare and analyze project objectives
- Prepare design calculations and schematic design
- Prepare Conceptual Design

1.30 Land Use and Zoning

The Heritage Oak East Subdivision had an approved tentative map and is currently zoned in the City's general plan. The purpose of this study is for a new tentative map that expired. The Heritage Oak East Subdivision consists of low-density residential, high density residential, community commercial, light industrial (self-storage), parks/open space, and roadways. We have prepared tables to address the existing Malone Sewer Pump Station Service Area Land Use, Heritage Oak East Land Use, Heritage Oaks West Land Use, and the Caliterra Ranch Land Use. See Table 2.1, Table 2.2, and Table 2.3 for the land use of each project.

Table No. 1.1 – Existing Malone Land Use[1]

Land Use Designation	Estimated Dwelling Units (DU)
Residential	
Low Density Residential	9
Medium Density Residential	427
Mobile Home Park	42
High Density Residential	55
Non-Residential	
Business/Commercial	81
Church	8
Civil Amenities	
Schools	28
Parks/Open Space (56.1 ac)	-
Public (i.e. Well, Lift Station)	-
Major Roadways	-
TOTAL	650

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[1] The land use information was provided in Table 4 of the System Evaluation and Capacity Assurance Plan – Phase 1 Report by City of Wheatland dated April 2010. The data was adjusted to include 22 EDU for Bishop Pumpkin Farm.

Table No. 1.2 – Heritage Oak East Land Use	
Land Use Designation	**Estimated Dwelling Units (DU)**
Residential	
Low Density Residential (119.0 ac)	490
Medium Density Residential	-
Mobile Home Park	-
High Density Residential (7.0 ac)	108
Non-Residential	
Business/Commercial (14.2 ac)	-
Civil Amenities	
Schools	-
Parks/Open Space (30.4 ac)	-
Public (i.e. Well, Lift Station) (0.9 ac)	-
Major Roadways (10.5 ac)	-
TOTAL	598

Table No. 1.3 – Heritage Oak West Land Use	
Land Use Designation	**Estimated Dwelling Units (DU)**
Residential	
Low Density Residential (41.2 ac)	176
Medium Density Residential	-
Mobile Home Park	-
High Density Residential	-
Non-Residential	
Business/Commercial	-
Civil Amenities	
Schools	-
Parks/Open Space (0 ac)	-
Public (i.e. Well, Lift Station) (0 ac)	-
Major Roadways (5.7 ac)	-
TOTAL	176

Table No. 1.4 – Caliterra Ranch Land Use	
Land Use Designation	**Estimated Dwelling Units (DU)**
Residential	
Low Density Residential (137.0 ac)	552
Medium Density Residential	-
Mobile Home Park	-
High Density Residential	-
Non-Residential	
Business/Commercial (3.6 ac)	-
Civil Amenities	
Schools (7.6 ac)	-
Parks/Open Space (40.1 ac)	-
Fire Station (1.9 ac)	-
Public (i.e. Well, Lift Station) (0.6 ac)	-
Major Roadways (9.9 ac)	-
TOTAL	552

1.40 Design Criteria

The design of a domestic sanitary sewer system depends on many factors, some of which can be measured with a fair degree of precision and others which rely upon engineering judgment. This section of the report discusses the parameters required to design a domestic sanitary sewer system acceptable to City of Wheatland. The project must be both technically and economically feasible.

The Heritage Oak East sanitary sewer system has five major elements as follows:

1. A Wastewater Treatment Plant. The waste water treatment plant shall remove constituents in the wastewater by physical, chemical, and biological means.

2. A network of underground gravity pipelines which are directly connected to the source (i.e. house, office, and store) without any pretreatment. The gravity pipelines convey the wastewater from the area of generation to the point where the wastewater will receive treatment.

3. Pump/Lift Stations. The gravity pipelines will convey the wastewater from the area of generation to the pump station, which will lift the wastewater to allow gravity flow to the wastewater treatment plant.

4. Cleaning Access to main lines. A system of manholes to be used by Wheatland.

5. A management, operating, and maintenance group.

The emphasis of this Interim Design analysis is element number 3. Element 2 and 4 will be provided internally as part of the Heritage Oak East Project, and the remaining elements will be provided by City of Wheatland.

1.40 General Design Considerations

Numerous design considerations had to be made to properly produce a conceptual design. We used the Sacramento County standards for estimating sewage flows and designing collection sewer systems. The peaking factor range from as high was 3.5 to a low of 1.56. These design considerations will assure that the project meets current engineering standards and the approval of OPUD. For this study, we used Sacramento County standards which are slightly more conservative than OPUD requirements. The design criteria and considerations are as follows:

1. **Easements.** All proposed facilities will have a dedicated easement provided for future operation and maintenance or the infrastructure will be located within existing City right-of-way. The dedicated easement will be based on the following criteria:

   WIDTH = Trench depth + pipe diameter + two feet, or 15 feet, whichever is greater.

   In most cases, the proposed facilities will be located in City roadways, the above criteria refers to areas not located in City roadways.

2. **Sewer Flow Determination.** The sewer flow determination requirements will be a combination of demand rate for each land use type. The design of the sewer conveyance system was based on a flow rate of 270 gpd ADWF was used for the existing Malone Sewer Pump Station Service Area and 250 gpd ADWF was used for Heritage Oak Estates and Caliterra Ranch[2]. The national average for average household size is 2.54. The projected population was based on:

   - The average density (dwelling units per acre for each residential land use classification).
   - Land Use Types shown in the BSMPA.
   - The Biochemical Oxygen Demand is 310 mg/L.
   - The Suspended Solids Content is 240 mg/L.
   - Average household size of 3.00 people per dwelling unit for a typical LDR unit.
   - Average household size of 2.50 people per dwelling unit for a typical HDR unit.

   The water demand requirements will be a combination of demand rate for each land use type plus the corresponding fire flows. Table No. 1.5, Table No. 1.6, Table No. 1.7, and Table No. 1.8 in the average dry weather flow for Existing Malone Sewer Pump Station, Heritage Oak East, Heritage Oak West, and Caliterra Ranch respectively. Table No. 1.9 addresses the different operation scenarios considered.

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[2] The 270 gpd value was obtained from the "System Evaluation and Capacity Assurance Plan – Phase 1 Report" by City of Wheatland dated April 2010. The 250 gpd value was obtained from the "Sewer Master Plan for Caliterra Ranch" by Wood Rodgers dated March 9, 2018.

Table No. 1.5 – Existing Malone PS – Average Dry Weather Flow			
Land Use Designation	**Unit Flow Rate (gpd/DU or gpd/ac)**	**Dwelling Units or Acres (DU or ac)**	**Flow Rate Demand (gal/day)[3]**
Residential	a	b	c = a * b
Low Density Residential	270	9	2,400
Medium Density Residential	270	427	115,300
Mobile Home Park	270	42	11,300
High Density Residential	270	55	14,900
Non-Residential			
Business/Commercial (3.6 ac)	270	81	21,900
Church	270	8	2,200
Civil Amenities			
Schools	270	28	7,600
Parks/Open Space		-	-
Fire Station		-	-
Public (i.e. Well, Lift Station)		-	-
Major Roadways		-	-
TOTAL		650	175,600

Table No. 1.6 – Heritage Oak East – Average Dry Weather Flow			
Land Use Designation	**Unit Flow Rate (gpd/DU or gpd/ac)**	**Dwelling Units or Acres (DU or ac)**	**Flow Rate Demand (gal/day)**
Residential	a	b	c = a * b
Low Density Residential	250	685	171,250
Medium Density Residential	250	-	-
Mobile Home Park	250	-	-
High Density Residential	200[4]	108	21,600
Non-Residential			
Business/Commercial (14.2 ac)	2,000	14.2 ac	28,400
Civil Amenities			
Schools	1,750	-	-
Parks/Open Space (30.4 ac)		-	-
Fire Station	2,000	-	-
Public (i.e. Well, Lift Station) (0.9 ac)		-	-
Major Roadways (10.5 ac)		-	-
TOTAL		885	221,250

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[3] The flow demand rates have been rounded to nearest 100 gal/day.

[4] The flow rate for HDR was determined by using 0.8 x 250 gpd

Table No. 1.7 – Heritage Oak West – Average Dry Weather Flow			
Land Use Designation	**Unit Flow Rate (gpd/DU or gpd/ac)**	**Dwelling Units or Acres (DU or ac)**	**Flow Rate Demand (gal/day)**
Residential	a	b	c = a * b
Low Density Residential	250	176	44,000
Medium Density Residential	250	-	-
Mobile Home Park	250	-	-
High Density Residential	200[5]	-	-
Non-Residential			
Business/Commercial (14.2 ac)	2,000	-	-
Civil Amenities			
Schools	1,750	-	-
Parks/Open Space (30.4 ac)		-	-
Fire Station	2,000	-	-
Public (i.e. Well, Lift Station) (0.9 ac)		-	-
Major Roadways (10.5 ac)		-	-
TOTAL		176	44,000

Table No. 1.8 – Caliterra Ranch – Average Dry Weather Flow			
Land Use Designation	**Unit Flow Rate (gpd/DU or gpd/ac)**	**Dwelling Units or Acres (DU or ac)**	**Flow Rate Demand (gal/day)**
Residential	a	b	c = a * b
Low Density Residential	250	552	138,000
Medium Density Residential	250	-	-
Mobile Home Park	250	-	-
High Density Residential	200	-	-
Non-Residential			
Business/Commercial (3.6 ac)	2,000	3.6 ac	7,200
Civil Amenities			
Schools (7.6 ac)	1,750	7.6 ac	13,300
Parks/Open Space (40.1 ac)		-	-
Fire Station (1.9 ac)	2,000	1.9 ac	3,800
Public (i.e. Well, Lift Station) (0.6 ac)		-	-
Major Roadways (9.9 ac)		-	-
TOTAL		650	162,300

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[5] The flow rate for HDR was determined by using 0.8 x 250 gpd

Table 1.9 – Design Scenarios	
Design Scenario	**Flow Rate Demand[6] (gal/day)**
Existing	175,600
Existing + Caliterra (50 EDU)	213,100
Existing + Caliterra (150 EDU) + Heritage Oak East (145 EDU)	249,400
Existing + Caliterra (225 EDU) + Heritage Oak East (225 EDU)	288,100
Existing + Caliterra (Buildout)[7]	337,900
Existing + Caliterra (Buildout) + Heritage Oak East (850 EDU) + Heritage Oak West (176 EDU)[8]	603,350

3. **Lateral Size.** The minimum size of laterals which serve single-family developments shall be four (4) inches in diameter. Schools, commercial, industrial, and multiple residential shall be served by lines a minimum of six (6) inches in diameter.

4. **Hydraulic Design Criteria.** The following criteria shall be followed for all hydraulic computations and the conceptual design:

   a. The Manning's equation will be used to analyze the hydraulic grade line. The Manning's roughness coefficient "n" value to be used in the computation shall not be less than 0.013.

   b. The maximum depth of the flow at design conditions in any lateral (10-inch diameter or less) shall be 0.7 diameters. Lines 12-inch in diameter or larger shall be 0.8 diameters.

   c. All sanitary sewer pipes shall be designed for a minimum slope to provide a velocity of two (2) feet per second at peak flows to prevent build up.

   d. Maximum design velocity shall not exceed ten (10) feet per second to prevent scour.

   e. The hydraulic grade line shall be determined from the design flows, based on 100 percent development of the tributary area.

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[6] Does not include peaking factor or I/I. These are average dry weather flows.

[7] Requires upgrades to pump station

[8] Requires upgrades to pump station

Table No. 2.8 – Minimum Pipe Slopes						
Pipe Diameter (inches)	Minimum Fixed Slope (ft/ft)	Minimum Study Slope (ft/ft)	Study Velocity (ft/s)	Design Capacity (mgd)	d/D	Approximate ESDs Served
Collector Sewers						
6	0.0050	0.0100	2.9	0.192	0.7	191
8	0.0035	0.0060	2.7	0.346	0.7	350
10	0.0025	0.0035	2.4	0.531	0.7	544
Trunk Sewers						
12	0.0020	0.0024	2.2	1.029	0.8	919
15	0.0015	0.0018	2.2	1.616	0.8	1,465
18	0.0012	0.0014	2.2	2.251	0.8	2,158
21	0.0011	0.0012	2.3	3.237	0.8	3,006
24	0.0010	0.0011	2.4	4.134	0.8	4,349
27	0.0010	0.0010	2.6	6.405	0.8	6,663
30	0.0010	0.0010	2.6	6.491	0.8	8,066
33	0.0010	0.0010	2.8	7.640	0.8	10,506
36	0.0010	0.0010	3.0	8.619	0.8	13,376

f. No sewer service shall be more than twenty (20) feet in depth. In the design of the system, one of the controlling conditions shall be that the lateral is to be at a sufficient depth to provide a minimum slope of three (3) inches per foot, at the same time maintaining a minimum cover of 12 inches at any building location within the properties to be served. Proposed building pad elevations shall be designed to be at least six inches higher than the lowest upstream manhole rim. Additional manholes may be required even though the manhole spacing may be adequate.

5. **Air-vacuum and air-relief valves.** Air-vacuum and air relief valves will be used to permit release of air which accumulates in the pipeline and to prevent negative pressures from building up when the lines are drained. Valves will be located at high points throughout the system. Air release valves will be considered on long ascending, descending, and horizontal reaches to alleviate constructing air pockets from forming in the pipeline. This is for the force main from the pump station to wastewater treatment plant.

1.50 Geometric Layout

The geometric layout of the system was based on the Heritage Oak East Project and Heritage Oak West land use/lotting plan and the Caliterra Ranch Tentative Map. The sewer mains will be located within the road rights-of-way as shown in Figure No. 1.1.

1.60 Hydraulic Analysis

A hydraulic analysis was conducted using an EXCEL spreadsheet to analyze the proposed sanitary sewer pump station system. The EXCEL spreadsheet was developed using criteria in the City of Wheatland Master Plan and Caliterra Ranch Master Sewer Plan. The flow rates used were as stated in Table No. 2.4, 2.5, and 2.6. The design flows were calculated by the below equations.

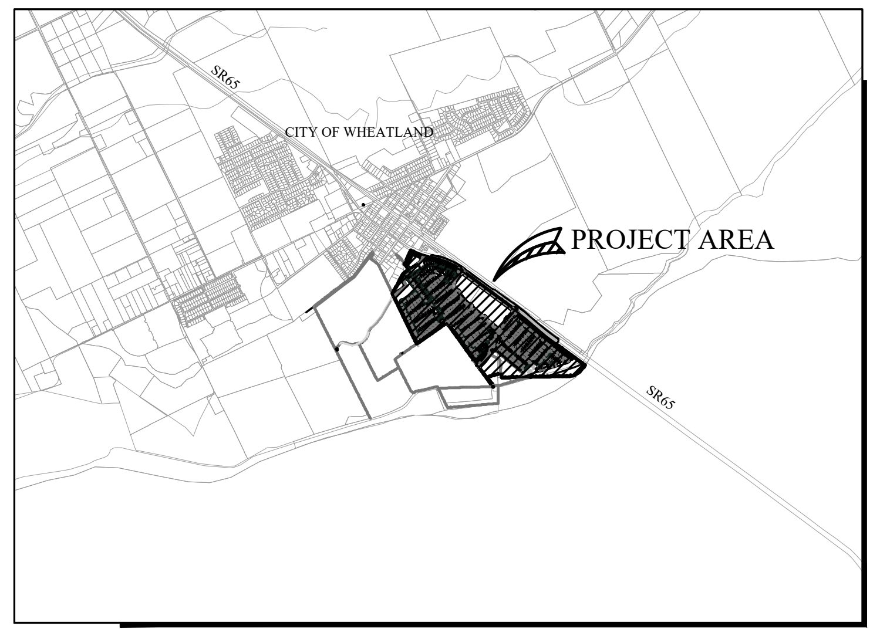
Peak Wet Weather Flow, PWWF (MGD) = ADWF * (PF) + I/I
Average Dry Weather Flow, ADWF (MGD) = See Table No. 1.5, 1.6, 1.7, and 1.8
Peaking Factor, PF = 2.8*ADWF^(-0.155) with a minimum value of 1.2 and maximum of 5

The results of the hydraulic analysis are provided in the Appendix.

HERITAGE OAKS ESTATES
SEWER LAYOUT

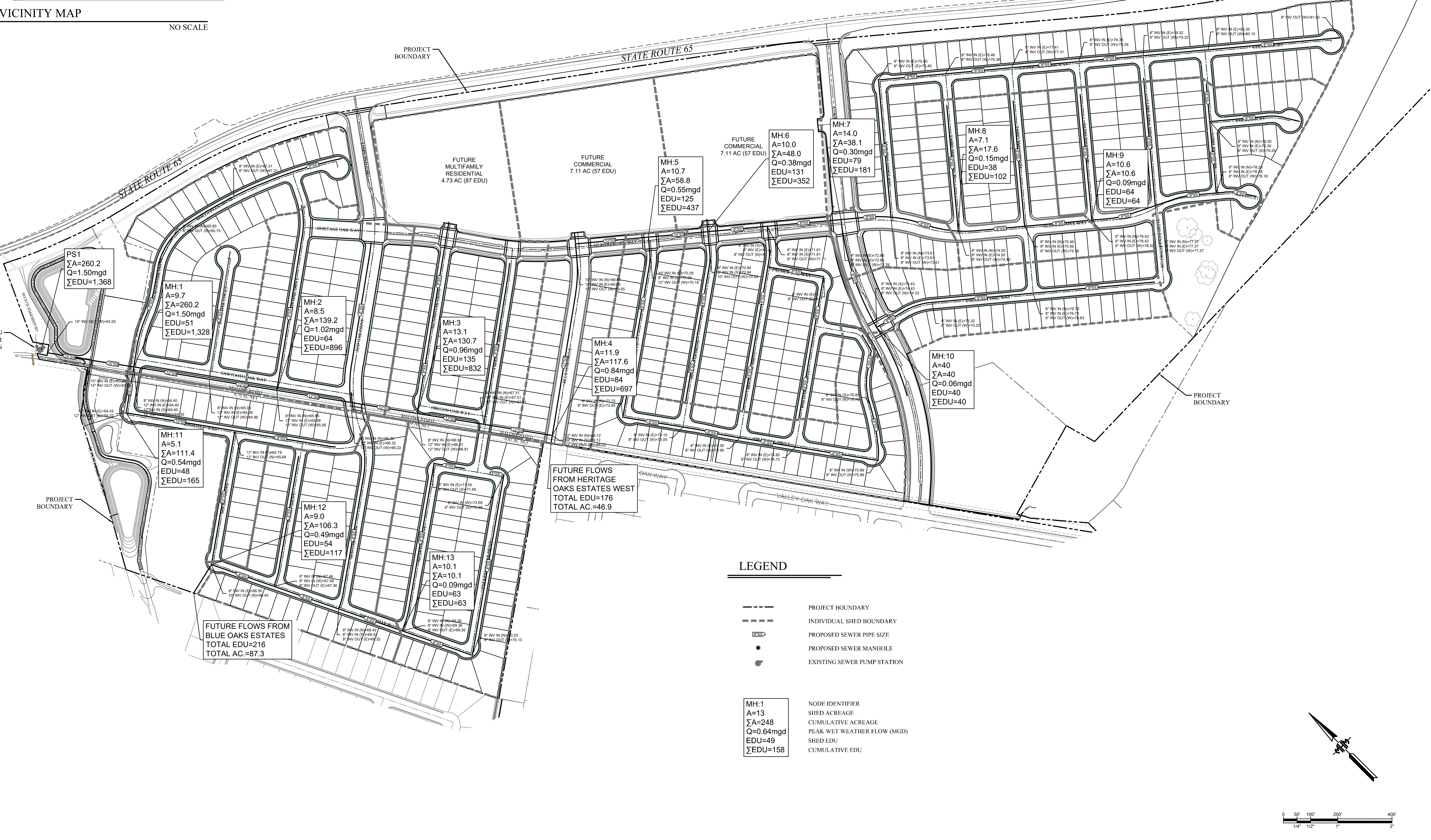
CITY OF WHEATLAND

JUNE 2023



VICINITY MAP

NO SCALE



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ENGINEERS & SURVEYORS SINCE 1892

FIGURE 1-1

HERITAGE OAKS ESTATES
SEWER LAYOUT

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HYDRAULIC CALCULATIONS

Project description: Heritage Oaks Estates - East **Sheet No.:** 1 **of** 1

Location of project: Wheatland, California **Job No.:** 22191

Sewer data source: Heritage Oaks Estates - TSTM 2023-0001 **Sewer Design Criteria:** City of Roseville

Calculated by: J. Groeser **Date:** 6/30/2023

Flow per EDU: 250 gpd **I+I Flow:** 1400 gpd/ac.

Location		**DU**	**Sum DU**	**Acreage**	**Sum Acreage**	**Q gpd**	**Q mgd**	**PF**	**Adjusted Q mgd**	**I+I mgd**	**Total Wet Weather Q mgd**	**Pipe n= 0.013**					**FL ft**	**Head Loss ft**	**HGL ft**
From	**To**											**Slope ft/ft**	**Dia in**	**d/D in/in**	**Vel ft/s**	**L ft**			
MH10	MH7	40	40	6.4	6.4	10,000	0.01	5.00	0.05	0.01	0.06	0.0035	8	0.7	2.0	421	72.39	0.01	66.43
H.O.W.	MH4	176	176	46.9	46.9	44,000	0.04	4.54	0.20	0.07	0.27	0.0035	8	0.7	2.0	449	68.25	0.22	66.03
B.O.	MH12	216	216	87.3	87.3	54,000	0.05	4.40	0.24	0.12	0.36	0.0025	10	0.7	2.0	449	67.29	0.12	65.34
MH9	MH8	64	64	10.6	10.6	16,000	0.02	5.00	0.08	0.01	0.09	0.0035	8	0.7	2.0	449	75.00	0.03	66.56
MH8	MH7	38	102	7.1	17.6	25,500	0.03	4.94	0.13	0.02	0.15	0.0035	8	0.7	2.0	717	73.43	0.11	66.53
MH7	MH6	79	221	14.0	38.1	55,250	0.06	4.39	0.24	0.05	0.30	0.0035	8	0.7	2.0	492	70.92	0.29	66.42
MH6	MH5	131	352	10.0	48.0	88,000	0.09	4.08	0.36	0.07	0.43	0.0025	10	0.7	2.0	220	69.20	0.08	66.13
MH5	MH4	125	477	10.7	58.8	119,250	0.12	3.89	0.46	0.08	0.55	0.0020	12	0.8	2.0	984	68.65	0.23	66.05
MH4	MH3	84	737	11.9	117.6	184,250	0.18	3.64	0.67	0.16	0.84	0.0020	12	0.8	2.0	504	66.68	0.28	65.81
MH3	MH2	135	872	13.1	130.7	218,000	0.22	3.55	0.77	0.18	0.96	0.0020	12	0.8	2.0	524	65.67	0.38	65.54
MH2	MH1	64	936	8.5	139.2	234,000	0.23	3.51	0.82	0.19	1.02	0.0020	12	0.8	2.0	534	64.62	0.43	65.16
MH13	MH12	63	63	10.1	10.1	15,750	0.02	5.00	0.08	0.01	0.09	0.0035	8	0.7	2.0	744	68.77	0.04	65.27
MH12	MH11	54	333	9.0	106.3	83,250	0.08	4.12	0.34	0.15	0.49	0.0025	10	0.7	2.0	906	66.16	0.46	65.22
MH11	MH1	48	381	5.1	111.4	95,250	0.10	4.03	0.38	0.16	0.54	0.0020	12	0.8	2.0	172	63.90	0.04	64.77
				0.0															
MH1	PS1	51	1,368	9.7	260.3	342,000	0.34	3.31	1.13	0.36	1.50	0.0015	15	0.8	2.0	322	63.55	0.17	64.73
	SUM=	1,368	SUM=	260													**HGL at Wet Well =**		64.55
																	Invert at Wet Well =		63.55

Note: 1. The slope was assumed to be the slope of the pipe, not the HGL.
2. The mannings n value was based on using precast concrete (n = .013).
3. H.O.W. and B.O. are inflows from future developments.
4. The HGL is based on the outfall pipe with a soffit elevation at 64.80 (NAVD88).

SACRAMENTO AREA SEWER DISTRICT STANDARDS

1.70 Pipe Selection

The type of pipe used for the closed conduit will meet the requirements of City of Wheatland. We have provided five different pipe alternatives, which we feel will meet the requirements of the design. The pipes are as follow:

1. High Density Polyethylene (HDPE) Pipe for force main. The pipe shall be 100 psi (DR17) minimum and conform to the requirements of AWWA C906. All joints and fittings shall be by the butt fusion method. All fittings shall conform to AWWA C906 requirements.

2. Vitrified Clay Pipe (VCP) for gravity. The pipe and fittings shall be extra strength unglazed, bell and spigot pipe and shall conform to ASTM designation C-700. The pipe joints shall be of the mechanical compression type, conforming to ASTM designation C-425.

3. Ductile-Iron Pipe (DIP) for gravity or force main. The pipe shall be Class 51 for non-pressure pipe and thickness class 53 for pressure pipe minimum and conform to the requirements of AWWA C151 for ductile-iron pipe. The fittings shall conform to AWWA C110 for cost iron fittings and C111 for rubber goshet joints. All flanged fittings shall conform to AWWA C110. All ductile iron pipes shall have fusion bonded epoxy coating. Fusion bonded epoxy coatings shall be Scotchkote No. 206-N or equal, 12 mils minimum thickness, applied according to manufacturer's recommendations.

4. Polyvinyl Chloride (SDR 26) Pipe for gravity. The pipe shall be polyvinyl chloride pipe conforming to ASTM D3034 (PVC). The polyvinyl chloride pipe joints shall have rubber rings conforming to ASTM F477 and have joints meeting or exceeding the requirements of ASTM D3139.

5. Polyvinyl (PVC) (C-900) Pipe for force main. The pipe shall conform to current AWWA C-900 and have underwriters' Laboratories, Factory Mutual and NSF approval. All parts of C-900 not in conflict with these specifications shall apply in force. The pipe shall be 150 psi (SDR18) PVC 1120 ASTM D1784 (12454-B), polyvinyl chloride pipe conforming to AWWA C-900 (PVC) or AWWA C-905 (PVC), be 165 psi (SDR25) PVC 1120. The polyvinyl chloride pipe joints shall be rubber rings conforming to ASTM F477 and have joints meeting or exceeding the requirements of ASTM D3139.

6. Concrete Cylinder Pipe (CCP) for gravity or force main. The pipe shall be rated for the pressure and depth of the installation. Rubber gasketed joints for gravity installation and welded, coated joints for force mains. All pipes shall have fusion bonded epoxy lining. Fusion bonded epoxy coatings shall be Scotchkote No. 206-N or equal, 12 mils minimum thickness, applied according to manufacturer's recommendations.

1.80 Pump Station and Force Main

The type of pipe used for the closed conduit will meet the requirements of OPUD. We have provided three different pipe alternatives, which we feel will meet the requirements of the design. The pipes are as follow:

1. Location. The minimum distance from the station to any existing or future home or other structure shall be fifty (50) feet. Adequate access must be furnished for vehicles of such size as may be necessary to deliver chlorine cylinders or to remove station equipment.

2. Capacity. Depending on the size of the service area and the extent of the development at the time of the station construction, the station's initial pumping capacity may be less than ultimate. Allowance for larger or additional pumping equipment must be made for the future requirements.

3. Wet Well. The shape of the wet well and the detention time will be such that the deposition of solids is minimized and the sewerage does not become septic.

4. Pumps. The pumping equipment shall consist of centrifugal pumps. Pump suction and discharge size shall be a minimum of 6-inch diameter. Pump drive units shall be electric. A sufficient number of pumping units shall be installed such that station capacity can be maintained with any one unit out of service.

5. Force Mains. Force mains shall be designed such that velocities normally fall within a range from 3 to 6 feet per second.

1.90 Summary and Recommendation

The intent of this technical memorandum was to provide some background information to for the environmental document. Based on the flows generated by the project, it appears that a large diameter gravity line / force main will need to be constructed to the OPUD wastewater treatment plant. A lift/pump station will be required at the site. Another option for the OPUD conveyance line would to be to run a fourteen (14) inch force main to a point were gravity conveyance line can reach the treatment plant to serve the Magnolia Ranch project at full build out, a twenty-four (24) inch sewer pipe will need to be provided for the gravity conveyance into the OPUD wastewater treatment plant. Again, a more detailed study will be developed to address the technical aspects of the connection to the OPUD plant.

Appendix H

BASIS OF DESIGN REPORT

(Revised)

HERITAGE OAKS EAST ESTATES DRAINAGE AREA INTERIM DRAINAGE PLAN

Prepared by:

MHM Incorporated
523 J Street, P.O. Box B
Marysville, California 95901

Prepared for:

City of Wheatland
111 C Street
Wheatland, California 95692

May 31, 2024

PURPOSE

The purpose of this report is to explain, analyze, and define Interim Drainage Plan for the development of Heritage Oaks Estates - East in Wheatland, California. The previous “Basis of Design Report – Heritage Oaks Estates Drainage Area Master Drainage Plan” was completed in June 2006. The study area covered in the report was the full development of Heritage Oaks Estates - East, Heritage Oaks Estates - West, full development of Blue Oaks Estates aka Roddan Ranch, and an additional 42 acres of land west of Heritage Oaks Estates which at the time was owned by the DeValentine Family. This 42-acres is now owned by the Bishop Family. This regional drainage plan included a Regional Detention Pond, Regional Storm Drainage Pump Station, and outfall pipelines. This Master Drainage Plan could easily be modified to include additional lands by increasing the size of the regional detention pond. Some lands that were considered in 2006 were the Jones Ranch Subdivision and lands to the west of the 42 acres parcel. The pump station size would remain the same and the regional detention pond would be expanded. It should be noted that a complete design for the regional pump station was completed along with the force main to the Bear River. We received an encroachment permit from Central Valley Flood Control Agency but in 2010, RD 2103 told CVFPB that the permit was no longer needed. The CVFPB encroachment permit will most likely need to be started from the beginning. As stated, the purpose of this study is to analyze the development of Heritage Oaks Estates – East project. The goal will be to outline the facilities needed to mitigate the peak flows in Grass Hopper Slough and the volume of water being discharged downstream regardless of the peak flows. This drainage study details interim facilities that meet the criteria of the original 2006 Master Drainage Plan and are consistent with the full regional project. The drainage study will provide the detailed information showing that by constructing a portion of the regional detention storage that the 148.70 acres within the Heritage Oaks Estates – East project can develop meeting the criteria of no increase in peak flows and addressing volumetric issues by sizing the ponds to handle volumes from a ten (10) day storm with minimal release. This will result in over mitigating the peak flows to allow additional time to release water back into Dry Creek. The ponds will be sized with small outfall pipes, flap gates, low-capacity pumps, and other features to hold back the volume of water in the ponds for larger durations. The outfall pipes shall also have a sluice gate to allow City to reduce outfall further. These features will be covered in the detailed improvement plans following approval of the tentative map. In addition to this large detention pond, the subdivision will be required to meet State requirements to retain the 2-year, 24-hour storm onsite.

Key to this report is the comparison of runoff before and after development and the ability of the interim facilities to meet the criteria set forth in the 2006 Master Drainage Plan. A large portion of the Regional Pond will be constructed as part of the initial phasing. The portion of the regional detention pond storage to be constructed will be around 64.0 acre- ft. This portion of the regional detention pond will be located on the Heritage Oaks Estates – East property adjacent to Grasshopper Slough. A portion of this pond was constructed in 2006 when the site was massed graded. The configuration of the roadways in the original tentative map have changed but has been factored into the revised drainage design. The site will need to be massed graded again. The embankment from the detention pond will be incorporated into the adjacent lot and roadways so that no lot pads are located below the 100-year base flood elevation. Meeting the requirement for all lots to be above the 100-year base flood elevation was verified following the mass grading in 2006 when a LOMR-F was submitted and approved by FEMA. The additional embankment will provide additional factor of safety for the lots. The storm drainage collection system described in the 2006 Master Drainage Plan is essentially unchanged. Thus, the main focus of this study is: (1) the effects of discharging to Grasshopper Slough, (2) construction of a portion of the regional detention pond storage volume within the Heritage Oaks Estates – East Project, (3) assessing the effects on the storm drain system due to any changes in peaking pond water levels, and (4) holding the volume of runoff for long periods to minimize downstream pond and allow additional time to release water into Dry Creek.

STUDY AREA AND DESIGN OVERVIEW

Heritage Oaks Estates - East covers approximately 148.70 acres of land south of the current City Limits, west of State Route 65, and north of the Bear River Levee. The development area is divided into 10 villages, with Units 5 and 6 located west of Malone Avenue and the rest east of Malone Avenue. As noted above, Peaking Ponds 1 and 2 were constructed in 2006 as part of the mass grading. The two detention ponds will be connected with storm drainage pipes and will operate as one detention pond. The system when designed will have the ability to isolate ponds to allow for O&M or to direct all the water to one pond to allow for the potential multi use of the pond bottoms for play fields or dog parks. This is consistent with the 2006 Master Drainage Plan. The main difference is that the detention pond volume has been greatly increased to allow Heritage Oaks East to proceed prior to the development of the pump station to Bear River. The pond volume is large enough to handle the Heritage Oaks Estates – East and Heritage Oaks Estates – West, the commercial center, the self-storage area, and some of the Blue Oak once the regional pump station is installed but, in the interim, will mitigate the Heritage Oaks Estates - East. The detention pond will have a small 5 cfs pump to discharge water from the lower elevations in the pond. The project will provide facilities for handling runoff from a 100-year storm and an underground trunk line conveyance system for a 25-year storm.

Historic drainage for the area under development has been to Grasshopper Slough. Specific criteria to be met by the interim facilities are identical to those laid out in the 2006 Master Drainage Plan with additional requirements on water surface and discharge to Grasshopper Slough. These are summarized below.

1. Construction of two underground trunk lines, capable of handling a twenty-five (25) year storm. The peak water level in ponds during the 25-year event shall be below the lowest DI grate served. The trunk lines will vary between thirty-three (33) inch and sixty-six (72) inch storm drain pipe;

2. Utilization of detention ponds adjacent to Grasshopper Slough. The east pond is west of State Route 65 and east of Malone Paseo has a storage capacity of 10.9 ac-ft at 80.30 feet (NAVD 88) which is the lowest DI elevation. The west pond located west of Malone Paseo has a storage capacity of 53.1 ac-ft at its rim elevation of 80.3 feet (NAVD 88) which is the lowest DI elevation.;

3. Construction of a forty-eight (48) inch between the west and east detention ponds;

4. Construction of a gravity outlet from west detention pond to Grasshopper Slough. The outlet will be equipped with a flap gate to prevent backflow from Grasshopper Slough into the pond;

5. Construction of a high-flow weir in west detention pond which will operate only during very large storms events. The weir lip elevation shall be 0.25 feet higher than the 100-year event water surface in Grasshopper Slough. The weir will not operate during any event less than a 100-year event;

6. Installation of a variable speed pump capable of between 3 and 5 cfs from west pond into the Grass Hopper Slough will be required in order to use the entire storage volume offered by the pond system. This will allow the detention pond to be pumped dry over a 10-day period without any gravity flow.;

7. For both Phase I and Phase II (see Figure 1-1), the system has been sized so that peak outflow from the peaking ponds to Grasshopper Slough will not exceed the historic peak runoff from the property;

8. The volume in the detention ponds shall be sized to handle a 100-year 24 storm 5.83 inches of rainfall without any discharge into Grasshopper Slough. The pond volume will also be sized to handle a 100-year 20-day storm 13.9 inches of rainfall with outfall limited to 25 cfs between the gravity pipe and pump station. The outfall will be significantly less than the historic runoff when this property was used an orchard and row crops. We based the volume using some rough rational method calculations. Using a runoff coefficient of 0.65 for developed residential lots, an area of 115.73 acres includes all the residential lots in Village 1 through 10 plus the major roadways, and a 100-year storm event of 5.83 inch of rain in a 24 hours event. This results in a need of 0.65 x 115.73 ac x 5.83 in /12in/ft = 36.55 acres-ft of storage required which is less than the proposed 64.0 acre-feet of storage. This would be considered a retention pond calculation for a 100-year storm event. The second check was looking at the volumes needed for a 100 year 20-day storm comparing residential development to the pre-development condition of an orchard. This results in a need of (0.65 residential – 0.30 orchard) x 115.73 ac x 13.9 in/12 in/ft = 46.9 acre-ft which is less than the proposed 64.0 acre-feet of storage. The third check was a 100 year 30-day storm comparing residential development to the pre-development condition of an orchard. This results in a need of (0.65 residential – 0.30 orchard) x 115.73 ac x 16.5 in/12 in/ft = 55.7 acre-ft which is still less than the proposed 64.0 acre-feet of storage. We also run some hydraulic models using HEC-HMS and SWMM to verify the outflow and depths in the ponds.

DESCRIPTION OF PHASED IMPROVEMENTS

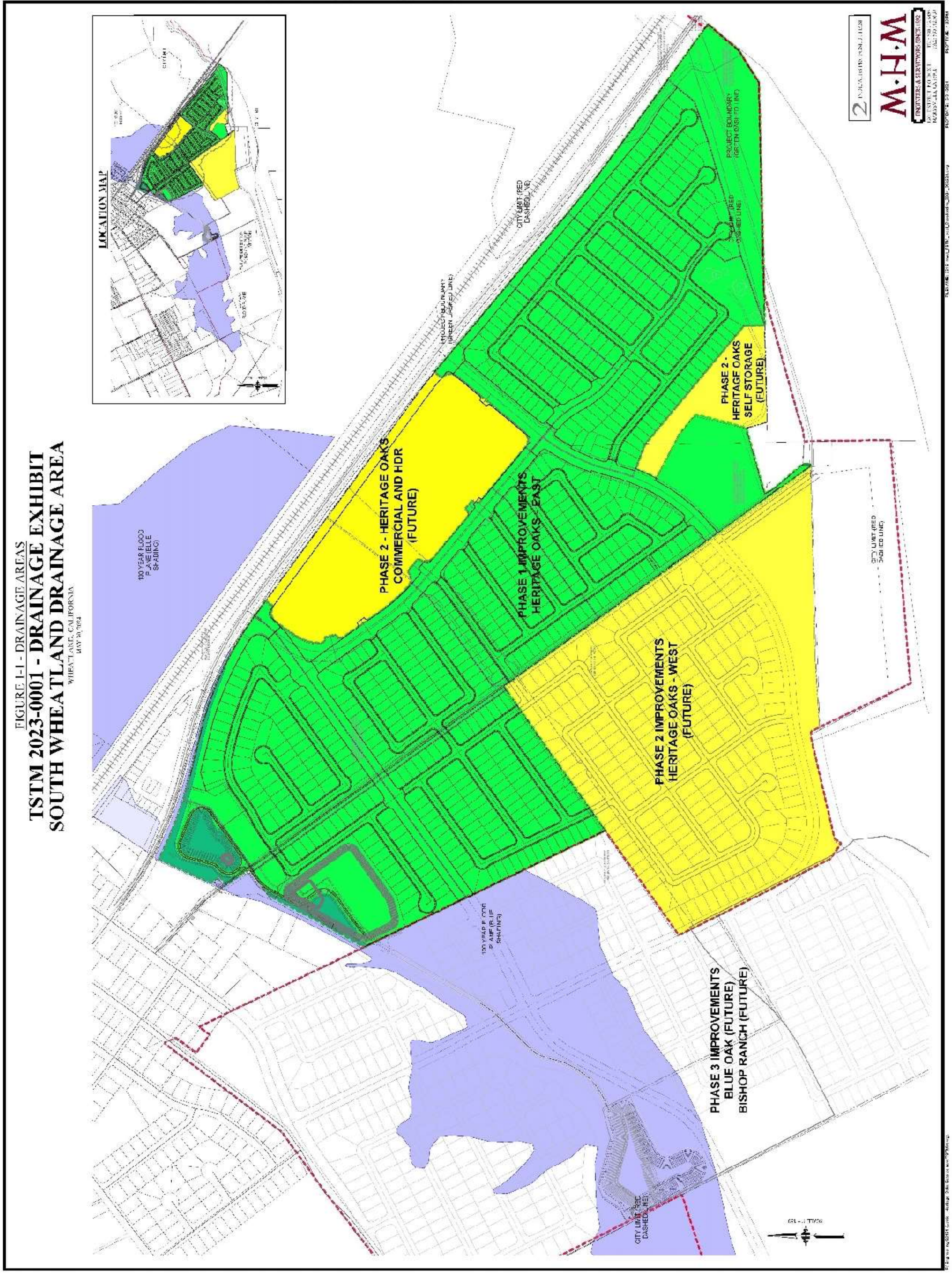
The Heritage Oaks Estates project area with Development Phases I and II is shown in Figure 1-1. The Heritage Oaks Estates project includes both Heritage Oaks East (Lewis Properties), Heritage Oaks West (DeValentine), Heritage Oaks Mult-Family (Scott Etal), Heritage Oaks Commercial (Scott Etal), and Heritage Oaks Self Storage (Scott Etal). Under Phase I, Heritage Oaks West (DeValentine), Heritage Oaks Mult-Family (Scott Etal), Heritage Oaks Commercial (Scott Etal), and Heritage Oaks Self Storage (Scott Etal) are treated as undeveloped and both ponds are sized to mitigate runoff only from the portions developed in Phase 1. Under Phase 2, Heritage Oaks West (DeValentine), Heritage Oaks Mult-Family (Scott Etal), Heritage Oaks

Commercial (Scott Etal), and Heritage Oaks Self Storage (Scott Etal) will be developed and will significantly increase the volume of runoff. At this time, the detention pond could be enlarged or the regional pump station installed or combination of both. The storm drain trunk lines within Phase 1 are sized to handle the runoff from the complete Phase II development, but further improvements on the pond system will be required during the construction of Phase II to mitigate the impact of development.

Phase I will develop the entire area included in the Heritage Oaks Estates – East tentative map (Units 1 through 10). The entire Phase I development will drain to the west trunk line with the exception of Units 5 and 6. This map includes areas of future multifamily and commercial developments. These areas were considered developed during the hydrologic analysis so the trunk lines and ponds have the capacity for these developments. As part of Phase I, the ponds will be connected with a 48-inch underground pipe. The gravity outfall structure from the West Detention Pond to Grass Hopper Slough will be sized to mitigate peak flow for all storm events through 100 year and also help detention volume in the pond. At this time, the outfall pipe has been modeled to be an 18-inch pipe. Because a portion of the detention pond will be below the invert of the adjacent Grasshopper Slough, there will be a small 5 cfs pump to discharge water into the canal once flows has decreased and water has been discharged back into Dry Creek at the west end of Grasshopper Slough. The outfall from the West Pond into Grasshopper Slough shall be limited to an 18-inch culvert set at elevation 75.0 feet (NAVD88) which is the flow line of the slough at that location. The culvert will be equipped with a flap gate at the slough so that backflow from the slough to the pond cannot occur. It will also prevent outfall into Grasshopper Slough when the stage is greater than the pond elevation. The outfall also utilizes a weir at elevation 79.5 feet. The elevation was selected above the 100-year base flood elevation to allow some water to exit the pond during extreme conditions and prevent additional flooding within the streets of the subdivision. The weir will have a width of 50 feet and will be designed to handle erosion with minimal to no damage. As will be shown and discussed later, this arrangement meets all the design criteria listed in the previous section of this report.

Phase II will develop all units and lands shown in the Heritage Oaks West (DeValentine), Heritage Oaks Mult-Family (Scott Etal), Heritage Oaks Commercial (Scott Etal), and Heritage Oaks Self Storage (Scott Etal). These units and lands will drain through the drain trunk lines into either the West or East detention pond depending on their location. Heritage Oaks West will flow directly into the West detention pond. The Phase 1 project will construct the ultimate size to handle the runoff capacity of these developments. There is enough pond capacity if the regional pump station is constructed otherwise additional storage will be required to mitigate these lands. There is some excess capacity which is allowing the Phase 1 project to over mitigate the peak flow and store the volume for long periods of time to minimize or reduce downstream ponding. Part of the Phase II development process will include additional improvements to the pond system or construction of the regional pump station.

FIGURE 1-1 - DRAINAGE AREAS



TSTM 2023-0001 - DRAINAGE EXHIBIT
SOUTH WHEATLAND DRAINAGE AREA
WHEATLAND, CALIFORNIA
MAY 30, 2024

BACKGROUND INFORMATION

Numerous entities developed the information that has been used in the preparation of the original Basis of Design Report, and by extension, this Interim Drainage Study. This information consists of reports, maps, drawings, and manuals. The most important are listed below.

1. ***FEMA Letter of Map Revision, case #11-09-0886P, Bear River North Levee Rehabilitation Project***, effective Feb. 22, 2011.
2. ***Yuba County 2030 General Plan Update - DRAFT***, August 10, 2010, Yuba County Planning Department, Marysville, California.
3. ***Technical Advisory, CEQA and Low Impact Development Storm water Design: Preserving Storm water Quality and Stream Integrity Through California Environmental Quality Act (CEQA) Review,*** GOVERNOR'S OFFICE OF PLANNING AND RESEARCH, Sacramento, California, August 5, 2009
4. ***Flood Insurance Study; Yuba County (Unincorporated Areas)***, November 17, 1981, Federal Emergency Management Agency.
5. ***Hydraulic and Hydrologic Analysis of the Three Rivers Levee Improvement Authority's Phase IV Project,*** December 2006, MBK Engineers, Sacramento, California.
6. ***Lower Feather River Floodplain Mapping Study – Bear River Hydrology, Appendix B,*** April 2004, Floodplain Management Section of The Corps of Engineers, Sacramento District.
7. ***Sutter-Placer Watershed Area Study***, April 1982, USDA Soil Conservation Service and USDA River Basin Planning Staff.
8. ***Sacramento River Flood Control System Evaluation; Initial Appraisal Report – Mid-Valley Area,*** December 1991, U.S. Army Corps of Engineers, Sacramento District.
9. ***Hydrology Review Report – Linda and Olivehurst Drains, Bear River Basin,*** January 1980, U.S. Army Corps of Engineers, Sacramento District
10. ***Topographic Surveys of the Lower Feather and Bear Rivers for the Sacramento and San Joaquin River Basins Comprehensive Study, California, Contract DACW05-99-D-0005***, February 14, 2006, Towhill Inc., San Francisco, CA.
11. ***HEC-HMS Hydraulic Modeling Software***, U.S. Army Corps of Engineers, January 28, 2022.
12. ***Storm Water Management Model (SWMM),*** Version 5.2, United States Environmental Protection Agency, March 2, 2023.
13. ***Introduction to Hydraulics and Hydrology with Applications for Storm water Management, 2nd. Ed.,*** 2002, John Gribbin, Delmar Thomson Learning.
14. ***Soil Survey of Yuba County***, United States Department of Agriculture, Soil Conservation Service
15. ***Web Soil Survey***, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
16. ***Rainfall Analysis for Drainage Design - Bulletin No. 195***, October 1976, Department of Water Resources.
17. ***Engineering Meteorolgy Website http://www.water.ca.gov/floodmgmt/hafoo/hb/csm/engineering/***, California Department of Water Resources, State Meteorologist.

18. ***City of Wheatland; Flood Control; Planning Study***, February 1996, Ensign & Buckley Consulting Engineers.
19. ***Bear River – California, Feasibility Report for Water Resources Development***, September 1972, U.S. Army Corps of Engineers.
20. ***Regulations of the Reclamation Board for Encroachment into Adopted Plans of Flood Control,*** March 17, 1995, The Reclamation Board of the State of California.
21. ***Sacramento River Flood Control System Evaluation; Initial Appraisal Report – Mid-Valley Area,*** December 1991, U.S. Army Corps of Engineers, Sacramento District.
22. ***Bear River Bridge (on Pleasant Grove Road) Bridge Number 18C-0009; Hydraulic and Scour Study,*** January 12, 2000, MHM Incorporated.
23. ***Standard Plans and Specifications***, July 1992, California Department of Transportation.
24. ***Improvement Standards***, City of Wheatland.
25. Assessors Maps County of Yuba, California.

HYDROLOGY/HYDRAULICS ANALYSIS METHODS

The primary purpose of this drainage study is to provide design tools and information to ensure that the Heritage Oaks Project will not pose flood risks to residents both onsite and downstream. Two (2) main software tools were used in this study: HEC-HMS version 4.10 and the Storm Water Management Model (SWMM) by the United States Environmental Protection Agency. A noticeable difference between this study and the 2006 Master Drainage Plan is the rainfall data source. The 2006 study used rainfall values from the historic Wheatland 2NE gage, while this current analysis uses precipitation data reported in NOAA's Atlas 14. The precipitation data reported by NOAA is significantly higher than that recorded by the Wheatland 2NE gage, resulting in a higher quantity of storm runoff to manage

The 2006 Drainage Master Plan used a hydraulic model of the Grass Hopper Slough to estimate the effects of the runoff from the Heritage Oaks developments on local flood levels. Safe levels of discharge from the development to the Grass Hopper Slough were determined in the master plan, and those flows were used in this analysis to size outflow pipe from the detention ponds to ensure local flood risk will not increase.

The EPA's SWMM version 5.2 was used to develop a comprehensive hydrologic and hydraulic model of the proposed interim drainage system. The hydrologic model includes sub-basins representing the developed characteristics of the study area and a rainfall timeseries based on the SCS Type-1 storm, which generally represents storms within the Sacramento Valley. The hydraulic model includes the east and west trunk lines, major storm drain junction manholes, both peaking ponds, and the outfall structures for the pond system. Future improvements such as the Regional Pond are included in the model, but they are removed from the simulation where appropriate. SWMM provides a continuous simulation of precipitation, runoff, and the subsequent hydraulic routing within the modeled drainage system. The simulation was used to estimate important quantities such as peak flows within the trunk lines, peak stages in the ponds, and outflows from the ponds to Grass Hopper Slough. An overall view of the drainage network can be seen in Figure 2-1, and a schematic view of the model is shown in Figure 2-2.

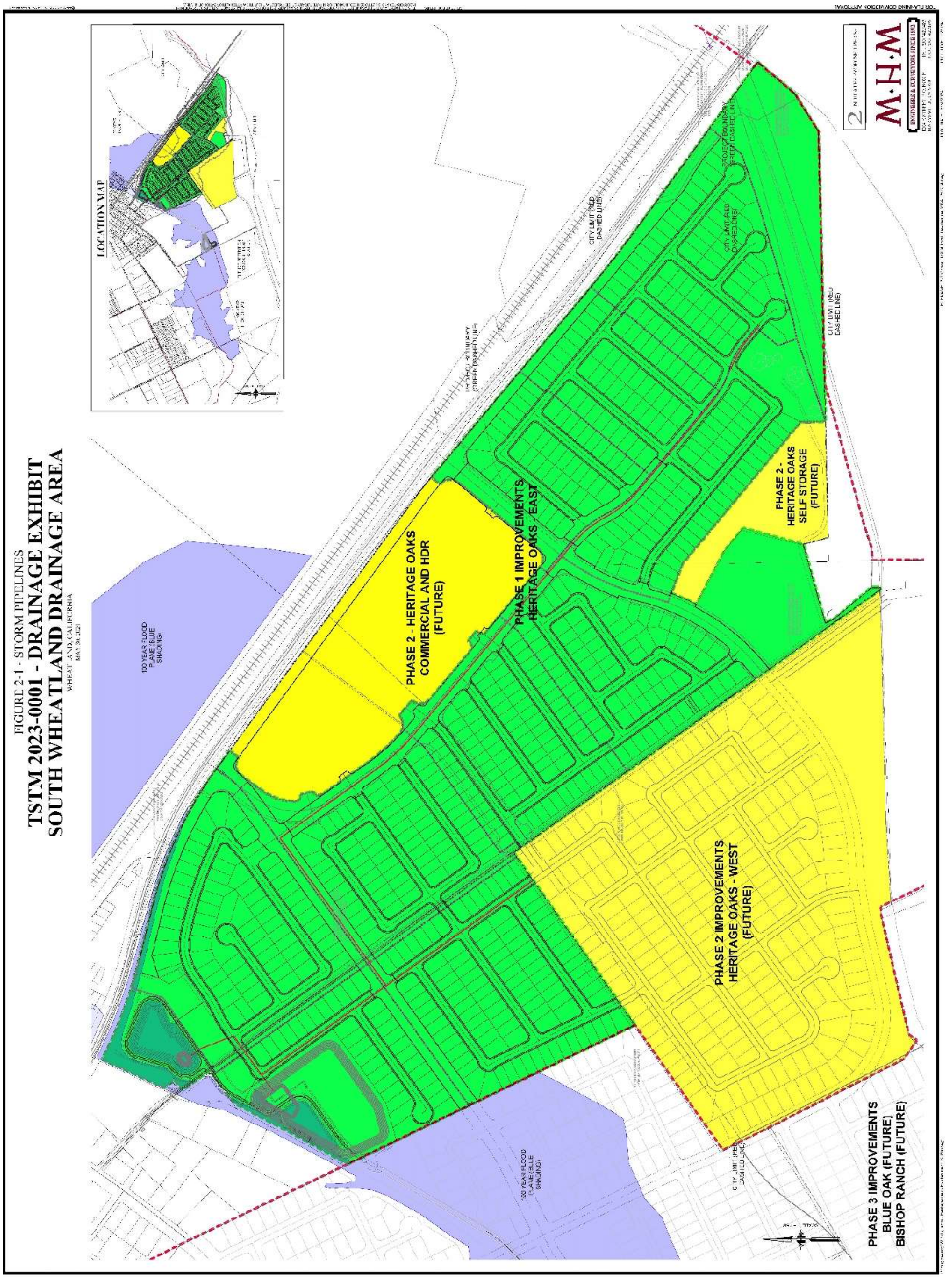


FIGURE 2-1 - STORM PIPELINES
TSTM 2023-0001 - DRAINAGE EXHIBIT
SOUTH WHEATLAND DRAINAGE AREA
WHEATLAND, CALIFORNIA
MAY 30, 2024
LOCATION MAP
100 YEAR FLOOD PLAIN (BLUE SHADING)
PROJECT BOUNDARY (GREEN DASHED LINE)
CITY LIMIT (RED DASHED LINE)
PHASE 2 - HERITAGE OAKS COMMERCIAL AND HDR (FUTURE)
PHASE 1 IMPROVEMENTS HERITAGE OAKS - EAST
PHASE 2 - HERITAGE OAKS SELF STORAGE (FUTURE)
PHASE 2 IMPROVEMENTS HERITAGE OAKS - WEST (FUTURE)
PHASE 3 IMPROVEMENTS BLUE OAK (FUTURE) BISHOP RANCH (FUTURE)
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ENGINEERS & SURVEYORS SINCE 1895
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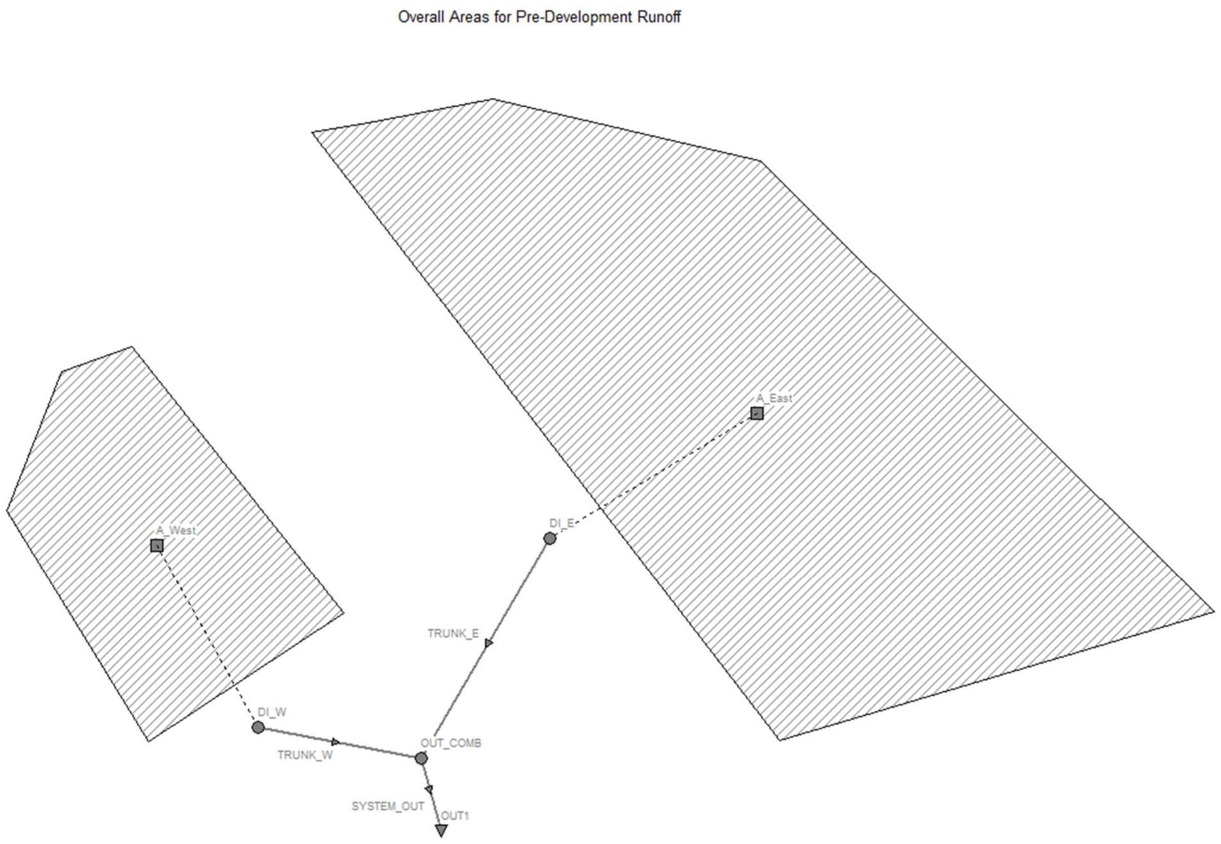

Figure 2-2: Schematic view of the SWMM model including existing basins.

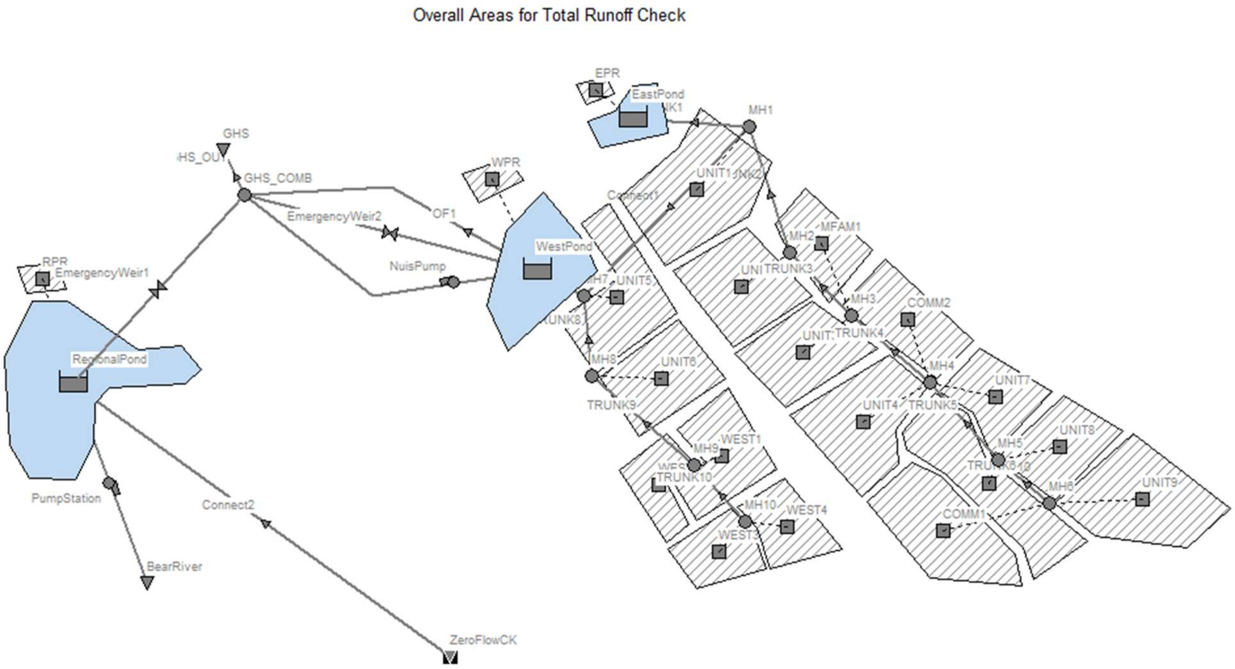

Figure 2-3: Schematic view of the SWMM model including planned future improvements.

DESIGN RUNOFF TO GRASSHOPPER SLOUGH

Prior to the construction of the Regional Pond and its corresponding pump station in Phase II, runoff from the Heritage Oaks development will drain to Grass Hopper Slough via a metered outfall from Pond #2. This outfall is a 36” pipe with an invert at 75.0 ft (NAVD88) and a flap gate on the outfall to prevent inflow from the Grass Hopper Slough. Additionally, there is a 5 cfs nuisance pump to ensure the ponds can drain completely between storms. The peak flows from the development (gravity and pump flows combined) for the 10-year, 25-year, and 100-year storm events are shown in Table 1 below. Time series plots of the outflows are shown in Appendix 3.

Table 1
Comparison of Historic to Developed Runoff to Grasshopper Slough
from the Heritage Oaks Property (176.7 acres). SWMM 5.2 Simulations.

Storm Event	Historic, Pre-development	Phase I Development
10-year – 24 Hour	24.8 CFS	22.2 CFS
25-year – 24 Hour	32.7 CFS	22.5 CFS
100-year – 24 Hour	52.3 CFS	23.9 CFS
100-year – 10 Day	59.6 CFS	25.0 CFS

DESIGN WATER SURFACE LEVELS IN GRASSHOPPER SLOUGH

As previously discussed, the pre-development and post-development water surface elevations in Grasshopper Slough were analyzed in the 2006 Drainage Master Plan. That study has shown that the outflows listed in Table 1 will not increase the flood stages of the Grass Hopper Slough. For reference, the resulting water surface elevations found in the 2006 Drainage Master Plan are listed in Table 2 below.

Table 2
Peak WSEL on Grasshopper Slough in the Heritage Oaks Area
(HEC-RAS Unsteady Simulations – 100-year, 24-hour storm)

Location	Computed Peak WSEL, feet (NGVD 1929)		
	Pre-development LOMR #11-09-0886P, effective Feb. 22, 2011	Phase I Development of Heritage Oaks	Phase II Development of Heritage Oaks
At downstream face of State Route 65 (Sta 304+39)	80.20	78.59	78.59
At upstream face of Malone Avenue (Sta	79.02	78.22	78.21
At downstream face of Malone Avenue (Sta 299+79)	78.40	78.02	78.01
Near upstream end of Peaking Pond #2 (Sta	77.94	77.94	77.94
West boundary of Heritage Oaks (Sta 292+39)	77.34	77.23	77.19

DESIGN WATER SURFACE LEVELS IN THE PEAKING PONDS

SWMM provides a complete look at the time-dependent nature of inflows, outflows and water surface elevations for the ponds in the system. This information aids greatly in the design of the detention basins. One of the main reasons for using SWMM simulations is to ensure that the ponds maintain adequate freeboard. The SWMM analysis was carried out for the three design storms. Peak pond elevations are shown in Table 3 below. Time series plots can be found in Appendix 1.

Table 3
Peak Water Levels in the Heritage Oaks Peaking Ponds under Phase I and II Development
SWMM Simulations, Elevations in Feet (NAVD88)

	Phase I Development	
Storm Event	East Pond	West Pond
10-year 24 Hour	77.6	77.6
25-year 24 Hour	77.7	77.6
100-year 24 Hour	77.7	77.8
100-year 10 Day	77.8	77.9

STORM DRAIN ANALYSIS FOR CAPACITY AND HGL

Both the East and West trunk lines were analyzed for a complete development of Phases I and II. This ensures that the ultimate capacity of the trunk lines will adequately carry the runoff from the complete Heritage Oaks Development. Under all conditions, the HGL in the trunk lines remain below all DI grates in the 2006 Master Grading Plan in a 10-year event. The static peak pond elevation remains below all DI grates for a 25-year event. All storm drains convey the 10-year event and all trunk lines convey the 25-year event.

Table 4
Peak Flows Delivered by the Storm Drain Systems to the Ponds in Heritage Oaks under Phase I and II Development. SWMM Simulations, Flows in CFS

	Post Development	
Storm Event	East SD to East Pond	West SD to West Pond
10-year 24 Hour	30.9	165.9
25-year 24 Hour	25.4	149.0
100-year 24 Hour	16.0	108.5
100-year 10 Day	8.56	85.0

CONCLUSION AND RECOMMENDATIONS:

Heritage Oaks Estates - East covers approximately 148.70 acres of land south of the current City Limits, west of State Route 65, and north of the Bear River Levee. The development area is divided into 10 villages, with Units 5 and 6 located west of Malone Avenue and the rest east of Malone Avenue. In order to develop, there will need to be mitigation measures taken to address downstream impacts on Grasshopper Slough. As noted above, Peaking Ponds 1 and 2 were constructed in 2006 as part of the mass grading. The two detention ponds will be connected with storm drainage pipes and will operate as one detention pond. The system shall be designed with the ability to isolate ponds to allow for O&M or to direct all the water to one pond to allow for the potential multi use of the pond bottoms for play fields or dog parks. This is consistent with the 2006 Master Drainage Plan and Five Basin Study. The main difference is that the detention pond volume on Heritage Oaks Estates - East has been greatly increased to allow Heritage Oaks East to proceed prior to the development of the regional pump station to Bear River. The pond volume is large enough to handle the Heritage Oaks Estates – East and Heritage Oaks Estates – West, the commercial center, the self-storage area, and some of the Blue Oak once the regional pump station is installed but, in the interim, will mitigate the Heritage Oaks Estates - East. The detention pond could have a small 3 to 5 cfs pump to discharge water from the lower elevations in the pond. The project will provide facilities for handling runoff from a 100-year storm and an underground trunk line conveyance system for a 25-year storm.

The recommended conditions of approval or mitigation measures for the Heritage Oaks Estates – East Project are as follows:

Development North of DeValentine Parkway (Villages 1 through 6 – total of 75 acres consisting of up to 450 single family residential lots and roadways)

1. The Construction of underground trunk lines, capable of handling a twenty-five (25) year storm. The peak water level in ponds during the 25-year event shall be below the lowest DI grate served. The trunk lines will vary between thirty (30) inch and sixty-six (72) inch storm drain pipe;

2. Construction of East Detention Pond with a storage capacity of 8.7 ac-ft below elevation 80.30 feet (NAVD 88) which is the lowest DI elevation in Heritage Oaks - East.

3. Construction of Phase 1 of the West Detention Pond with a minimum storage capacity of 35.0 ac-ft at its rim elevation of 80.3 feet (NAVD 88) which is the lowest DI elevation in Heritage Oaks - East. The minimum storage is based on a 100-year 10-day storm considering with no outfall into Grasshopper Slough. We based the volume using some rough rational method calculations. Using a runoff coefficient of 0.65 for developed residential lots, an area of 75.0 acres and a 100-year 10-day storm event of 10.7 inches of rain. This results in a need of 0.65 x 75.0 ac x 10.7 in /12 in/ft = 43.5 acres-ft of storage less the 8.7 ac-ft in east pond for a total of 34.8 acre-feet provided. The initial phase shall be design to gravity flow into Grasshopper Slough without a lift pump station.;

4. Construction of a thirty (30) inch pipeline from east detention pond to forty-eight (48) inch trunk line located in North Park Drive. The pipeline will allow flow in and out of the detention pond;
5. Construction of a forty-eight (48) inch pipeline to trunk line in North Park Drive;
6. Construction of a 18-inch gravity outlet from the west detention pond to Grasshopper Slough. The outlet will be equipped with a flap gate to prevent backflow from Grasshopper Slough into the pond.;
7. Construction of a 18-inch gravity outlet from the east detention pond to Grasshopper Slough. This pipeline shall have sluice gate and flap gate. This pipeline will be a secondary system and shall not be used unless there is maintenance occurring on the west detention pond outfall pipeline or detention pond.;
8. Construction of a high-flow weir in west detention pond which will only operate during storm events greater than 100-year 10-day storm event. The weir elevation shall be 0.25 feet higher than the 100-year event water surface in Grasshopper Slough. Since the weir will allow water to flow out of the pond and into the pond, the slopes shall be designed with rock slope protection or other slope protection to handle flow in either direction. The intent is flow out only but since there is the potential for flow into the pond, it needs to be considered in the design;

Development South of DeValentine Parkway (Villages 7 through 10 – total of 41 acres consisting of up to 235 single family residential lots and roadways – Assume Village 1 through 6 have been constructed)

1. The Construction of underground trunk lines, capable of handling a twenty-five (25) year storm. The peak water level in ponds during the 25-year event shall be below the lowest DI grate served. The trunk lines will vary between thirty (30) inch and sixty-six (72) inch storm drain pipe;
2. Construction of East Detention Pond with a storage capacity of 8.7 ac-ft below elevation 80.30 feet (NAVD 88) which is the lowest DI elevation in Heritage Oaks - East.
3. Construction of Phase 1 and Phase 2 of the West Detention Pond with a minimum storage capacity of 38.3 ac-ft at its rim elevation of 80.3 feet (NAVD 88) which is the lowest DI elevation in Heritage Oaks - East. The minimum storage is based on a 100-year 4-day storm event considering with no outfall into Grasshopper Slough or the 100-year 20-day storm event with some outfall into Grasshopper Slough whichever is greater. We based the volumes on using the rational method and runoff coefficients. Using a runoff coefficient of 0.65 for developed residential lots, an area of 116.0 acres, and a 100-year 4-day storm event of 8.29 inches of rain. This results in a need of 0.65 x 116.0 ac x 8.3 in /12 in/ft = 52.1 acres-ft of storage less the 8.7 ac-ft in east pond for a total of 43.4 acre-feet required. The 100-year 20-day storm when comparing residential development to the pre-development condition of an orchard resulted in a need of (0.65 residential – 0.30 orchard) x 116.0 ac x 13.9 in/12 in/ft = 47.0 acres-ft of storage less the 8.7 ac-ft in east pond for a total of 38.3 acre-feet required.;

4. Construction of a thirty (30) inch pipeline from east detention pond to forty-eight (48) inch trunk line located in North Park Drive. The pipeline will allow flow in and out of the detention pond;

5. Construction of a forty-eight (48) inch pipeline to trunk line in North Park Drive;

6. Construction of an 18-inch gravity outlet from the west detention pond to Grasshopper Slough. The outlet will be equipped with a flap gate to prevent backflow from Grasshopper Slough into the pond.;

7. Construction of an 18-inch gravity outlet from the east detention pond to Grasshopper Slough. This pipeline shall have sluice gate and flap gate. This pipeline will be a secondary system and shall not be used unless there is maintenance occurring on the west detention pond outfall pipeline or detention pond.;

8. Construction of a high-flow weir in west detention pond which will only operate during storm events greater than 100-year 10-day storm event. The weir elevation shall be 0.25 feet higher than the 100-year event water surface in Grasshopper Slough. Since the weir will allow water to flow out of the pond and into the pond, the slopes shall be designed with rock slope protection or other slope protection to handle flow in either direction. The intent is flow out only but since there is the potential for flow into the pond, it needs to be considered in the design;

9. If storage is required below the invert of Grasshopper Slough to meet the storage requirements, the installation of a variable speed pump capable of between 3 and 5 cfs from west pond into the Grass Hopper Slough will need to be installed. The pump was will be designed to operate only once the water surface in Grasshopper Slough lowers enough that the addition of 3 to 5 cfs will not impact the downstream system. This pump could also be used to pump the detention ponds over a 10-day period without any gravity flow.;

10. Following the issuance of the 460th single family residential building permit, the improvement plan design process for the Regional Pump Station shall commence. The improvement plans shall be approved by City prior to the 600th single family residential building permit. The CVFPB encroachment permit will be part of the construction phase and shall not be required to be completed by the Heritage Oaks Estates – East developer.

APPENDIX

1. **SWMM PLOTS OF POND DEPTHS DURING THE 100-YEAR, 24-HOUR STORM EVENT**

2. **SWMM PLOTS OF THE TRUNKLINE FLOWS DURING THE 25-YEAR, 24-HOUR STORM EVENT**

3. **SWMM PLOTS OF THE OUTFLOWS FROM POND#2 TO THE GRASS HOPPER SLOUGH DURING SEVERAL STORM EVENTS**

Appendix I

Biological Resources Assessment for the Heritage Oaks East Project

City of Wheatland, Yuba County, California

Prepared For:

Lewis Investment Company, LLC

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
2525 Warren Drive
Rocklin, California 95677

November 27, 2023

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LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
˚F	Fahrenheit
BCC	Birds of Conservation Concern
BO	Biological Opinion
BRA	Biological Resources Assessment
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRLF	California Red-Legged Frog
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DBH	diameter at breast height
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
Framework	USFWS Framework for Assessing Impacts to the Vally Elderberry Longhorn Beetle
GPS	Global Positioning System
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MCV	*A Manual of California Vegetation Online*
MLRA	Major Land Resource Area

Term	**Definition**
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
PCCP	Placer County Conservation Program
RWQCB	Regional Water Quality Control Board
SL	Standard Length
SNC	Sensitive Natural Community
SR	State Route
SSC	Species of Special Concern
Staff Report	*Staff Report on Burrowing Owl Mitigation*
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VELB	Valley Elderberry Longhorn Beetle
WBWG	Western Bat Working Group

1.0 INTRODUCTION

At the request of Lewis Investment Company, LLC, ECORP Consulting, Inc. has conducted a Biological Resources Assessment (BRA) for the proposed Heritage Oaks East (Project) located in the City of Wheatland, Yuba County, California. The results of this assessment will support environmental review of the Project in accordance with the California Environmental Quality Act (CEQA) and provide the basis for identifying appropriate measures to lessen or avoid significant impacts to biological resources.

1.1 Project Location and Description

The Project is located in the southern portion of the City of Wheatland southwest of State Route (SR) 65, north of the Bear River. The Bear River represents the southern limits of the Project and SR-65 is the eastern limit. The Project site is currently undeveloped with a vast majority of the site consisting of fallow weedy fields that had been mass graded in 2006 for development.

1.2 Study Area

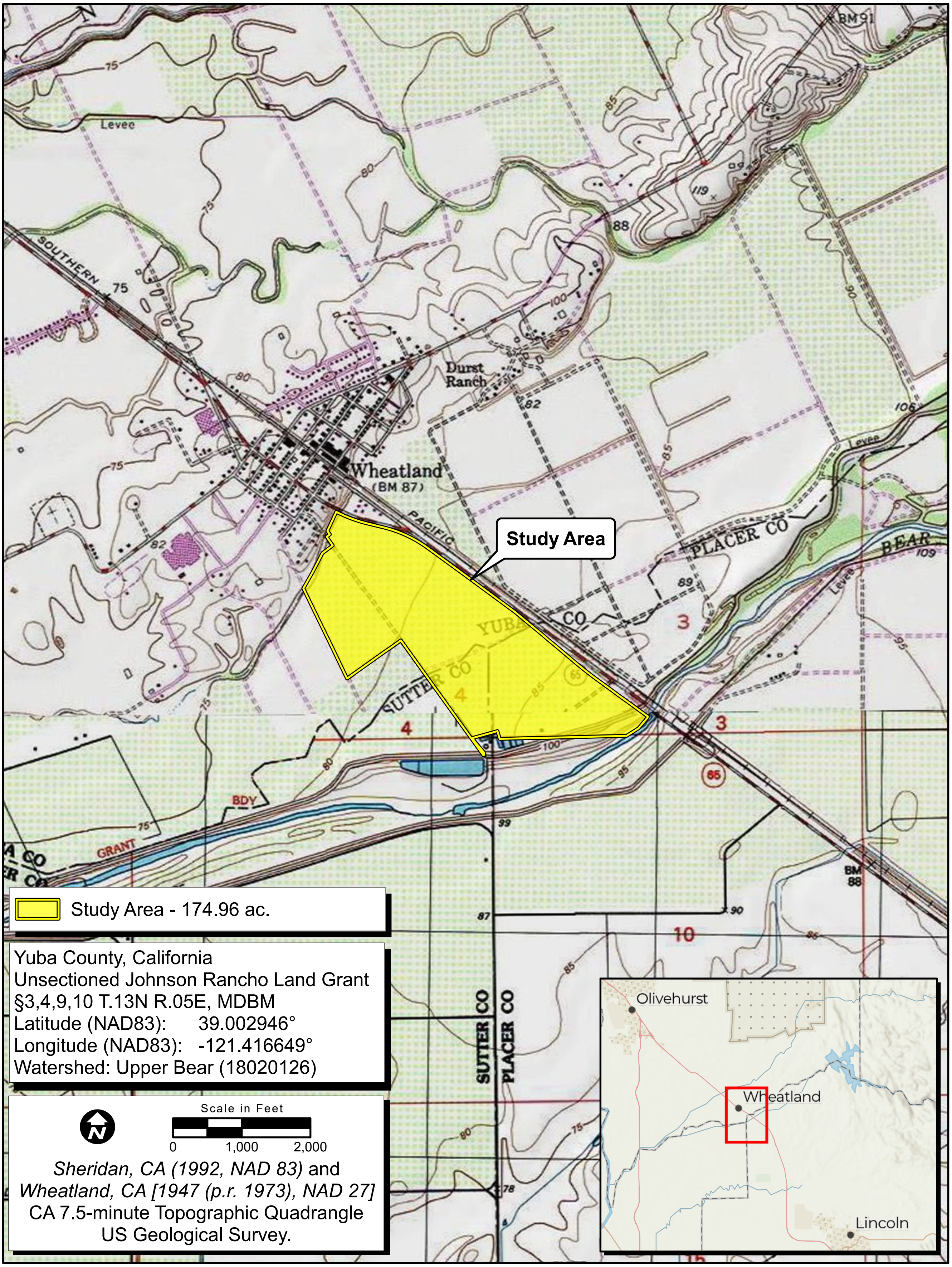
The Study Area includes all areas where Project-related activities may result in impacts to sensitive biological resources. The 174.96-acre Study Area corresponds to a portion of Sections 3, 4, 9, and 10, Township 13 North, and Range 05 East (Mount Diablo Base and Meridian) of the "Sheridan, California" and "Wheatland, California" 7.5-minute quadrangles (U.S. Geological Survey [USGS] 1992 and 1947, photorevised 1973, respectively, Figure 1). The approximate center of the Study Area is located at 39.002946° North and -121.416649° West within the Upper Bear watershed (Hydrological Unit Code 18020126, USGS 2023).

1.3 Purpose of this Biological Resources Assessment

The purpose of this BRA is to assess the potential for occurrence of special-status plant and animal species or their habitats, and other sensitive or protected resources such as migratory birds, sensitive natural communities, riparian habitat, oak woodlands, and potential waters of the United States (U.S.) or State, including wetlands, within the Study Area. This assessment does not include determinate field surveys conducted according to agency-promulgated protocols. The conclusions and recommendations presented in this report are based upon a review of available literature and the results of site reconnaissance field surveys.

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;
- are identified as a Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW);



▨ Study Area - 174.96 ac.

Yuba County, California
Unsectioned Johnson Rancho Land Grant
§3,4,9,10 T.13N R.05E, MDBM
Latitude (NAD83): 39.002946°
Longitude (NAD83): -121.416649°
Watershed: Upper Bear (18020126)

Scale in Feet
0 1,000 2,000

Sheridan, CA (1992, NAD 83) and
Wheatland, CA [1947 (p.r. 1973), NAD 27]
CA 7.5-minute Topographic Quadrangle
US Geological Survey.

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Location_Vicinity\HOE Location Vicinity.aprx - HOE LnV 20230922 (jwelsh - 9/22/2023)

Map Date: 9/22/2023
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2023-183 Heritage Oaks East

- are birds identified as Birds of Conservation Concern (BCCs) by the U.S. Fish and Wildlife Service (USFWS);
- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" California Rare Plant Rank [CRPR] 1 (CRPR 1); “rare, threatened, or endangered in California but more common elsewhere” CRPR 2; “review list” CRPR 3; or “plants of limited distribution” CRPR 4.
- are plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, Sections 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes); or
- are included in the list of special-status species for the City of Wheatland General Plan Update Draft Environmental Impact Report (Raney Planning & Management, Inc. 2005).

2.0 REGULATORY SETTING

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by the USFWS or the National Marine Fisheries Service (NMFS). Section 9 of the ESA prohibits the taking of listed wildlife, where take is defined as ”harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). For plants, the ESA prohibits removing or possessing any listed plant on federal land, maliciously damaging or destroying any listed plant in any area, or removing, cutting, digging up, damaging, or destroying any such species in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its designated Critical Habitat. Through consultation and the issuance of a Biological Opinion (BO), the USFWS may issue an incidental take statement allowing take of a listed species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a Habitat Conservation Plan (HCP) is developed.

2.1.2 Critical Habitat

Critical Habitat is defined in Section 3 of ESA as:

1. the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological

features essential to the conservation of the species and that may require special management considerations or protection; and

2. specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features that are essential to the conservation of the species. Critical habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

- Space for individual and population growth and for normal behavior
- Food, water, air, light, minerals, or other nutritional or physiological requirements
- Cover or shelter
- Sites for breeding, reproduction, or rearing (or development) of offspring
- Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species

Excluded essential habitat is defined as areas that were found to be essential habitat for the survival of a species and assumed to contain at least one of the primary constituent elements for the species but were excluded from the Critical Habitat designation. The USFWS has stated that any action within the excluded essential habitat that triggers a federal nexus will be required to undergo the Section 7(a)(1) process, and the species covered under the specific critical habitat designation would be afforded protection under Section 7(a)(2) of ESA.

2.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The protections of the MBTA extend to disturbances that result in abandonment of a nest with eggs or young. As authorized by the MBTA, the USFWS may issue permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits.

2.1.4 Magnuson-Stevens Act

Essential Fish Habitat (EFH) was defined by the U.S. Congress in the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act, or Magnuson-Stevens Act, as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." Implementing regulations clarified that waters include all aquatic areas and their physical, chemical, and biological properties; substrate includes the associated biological communities that make these areas suitable for fish habitats, and the description and identification of EFH should include habitats used at any time during the species' life cycle. EFH includes all types of aquatic habitat, such as wetlands, coral reefs, sand, seagrasses, and rivers.

2.1.5 Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredged or fill material into Waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas:

> “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b).

The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

2.2 State or Local Regulations

2.2.1 California Fish and Game Code

2.2.1.1 California Endangered Species Act

The California ESA (California Fish and Game Code Sections 2050-2116) generally parallels the main provisions of the federal ESA, but unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called *candidates* by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. *Take* is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Section 2081 allows CDFW to authorize incidental take permits if species-specific minimization and avoidance measures are incorporated to fully mitigate the impacts of the project.

2.2.1.2 Fully Protected Species

The state of California first began to designate species as *fully protected* prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the state and/or federal ESAs. Previously, the regulations that implement the Fully Protected Species Statute (California Fish and Game Code Sections 4700 for mammals, 3511 for birds, 5050 for reptiles and amphibians, and 5515 for fish) provided that fully protected species may not be taken or possessed at any time. However, on July 10, 2023, Senate Bill 147 (SB147) was signed into law, authorizing CDFW to issue take permits under the California ESA for fully protected species for qualifying projects through 2033. Qualifying projects include:

- A maintenance, repair, or improvement project to the State Water Project, including existing infrastructure, undertaken by the Department of Water Resources.
- A maintenance, repair, or improvement project to critical regional or local water agency infrastructure.
- A transportation project, including any associated habitat connectivity and wildlife crossing project, undertaken by a state, regional, or local agency, which does not increase highway or street capacity for automobile or truck travel.
- A wind project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the state to a point of junction with any California based balancing authority.
- A solar photovoltaic project and any appurtenant infrastructure improvement, and any associated electric transmission project carrying electric power from a facility that is located in the state to a point of junction with any California-based balancing authority.

CDFW may also issue licenses or permits for take of these species for necessary scientific research or live capture and relocation and may allow incidental take for lawful activities carried out under an approved Natural Community Conservation Plan within which such species are covered.

2.2.1.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW and provided in California Fish and Game Code Sections 1900-1913. The Fish and Wildlife Commission has the authority to designate native plants as *endangered* or *rare* and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code Sections 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

2.2.1.4 California Fish and Game Code Special Protections for Birds

Sections 3503, 3513, and 3800 of the California Fish and Game Code specifically protect birds. Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 prohibits the take, possession, or destruction of any birds in the orders Strigiformes (owls) or Falconiformes (hawks and eagles), as well as their nests and eggs. Section 3513 prohibits the take or possession of any migratory nongame bird as designated in the MBTA. Section 3800 states that, with limited exceptions, it is unlawful to take any nongame bird, defined as all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. These provisions, along with the federal MBTA, serve to protect all nongame birds and their nests and eggs, except as otherwise provided in the code.

2.2.1.5 Lake or Streambed Alteration Agreements

Section 1602 of the California Fish and Game Code requires that a Notification of Lake or Streambed Alteration be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The notification must incorporate proposed measures to protect affected fish and wildlife resources. During their review, CDFW may suggest additional protective measures. A Lake or Streambed Alteration Agreement (LSAA) is the final proposal mutually agreed upon by CDFW and the applicant. Projects that require an LSAA often also require a permit from the USACE under Section 404 of the CWA. The conditions of the Section 404 permit and the LSAA frequently overlap in these instances.

2.2.2 California Oak Woodlands Conservation Act

The California Oak Woodlands Conservation Act was passed in 2001 to address loss of oak woodland habitats throughout the state. As a result of the Act, the Oak Woodland Conservation Program was established to provide funding for conservation and protection of California oak woodlands. Public Resources Code Section 21083.4 went into effect as of January 1, 2005, and requires lead agencies to analyze potential effects to oak woodlands during the CEQA process. If it is determined that a project may have a significant effect on oak woodlands, the lead agency must implement one of several mitigation alternatives, including conservation of oak woodlands through conservation easements, planting or restoration of oak woodlands, contribution of funds to the Oak Woodlands Conservation Fund, or other appropriate mitigation measures.

2.2.3 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB also regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by the USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

2.2.4 California Environmental Quality Act

Per CEQA Guidelines Section 15380, a species not protected on a federal or state list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the federal and California ESAs, and Sections 1900-1913 of the California Fish and Game Code, which deal with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW.

2.2.4.1 CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Pursuant to Appendix G, impacts to biological resources would normally be considered significant if the project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected Waters of the U.S. including wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA because although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

2.2.4.2 Species of Special Concern

Species of Special Concern (SSC) are defined by the CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA or the California Fish and Game Code, but currently satisfy one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered and meets the state definition of threatened or endangered but has not been formally listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.

SSC are typically associated with threatened habitats. Projects that result in substantial impacts to SSC may be considered significant under CEQA.

2.2.4.3 USFWS Bird of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA." To meet this requirement, the USFWS published a list of Birds of Conservation Concern (BCC, USFWS 2021) for the U.S. The list identifies the migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

2.2.4.4 *Watch List Species*

The CDFW maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Depending on the policy of the lead agency, projects that result in substantial impacts to species on the Watch List (WL) may be considered significant under CEQA.

2.2.4.5 *California Rare Plant Ranks*

The CNPS maintains the *Rare Plant Inventory* (CNPS 2023a), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere
- Rare Plant Rank 3 – a review list of plants about which more information is needed
- Rare Plant Rank 4 – a watch list of plants of limited distribution

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 0.1 through 0.3, with 0.1 being the most threatened and 0.3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- Threat Rank 0.2 – Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- Threat Rank 0.3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2023b). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, 2A, or 2B are typically considered significant under CEQA Guidelines Section 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

2.2.4.6 Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are imperiled or vulnerable to environmental effects of projects. CDFW maintains the California Natural Community List (CDFW 2022), which provides a list of vegetation alliances, associations, and special stands as defined in *A Manual of California Vegetation Online* (MCV; CNPS 2023b), along with their respective state and global rarity ranks, if applicable. Natural communities with a state rarity rank of S1, S2, or S3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

2.2.4.7 Wildlife Movement Corridors and Nursery Sites

Impacts to wildlife movement corridors or nursery sites may be considered significant under CEQA. As part of the California Essential Habitat Connectivity Project, CDFW and Caltrans maintain data on Essential Habitat Connectivity areas. This data is available in the CNDDB. The goal of this project is to map large intact habitat or natural landscapes and potential linkages that could provide corridors for wildlife. In urban settings, riparian vegetated stream corridors can also serve as wildlife movement corridors. Nursery sites include but are not limited to concentrations of nest or den sites such as heron rookeries, bat maternity roosts, and mule deer critical fawning areas. These data are available through CDFW's Biogeographic Information and Observation System database or as occurrence records in the CNDDB and are supplemented with the results of the field reconnaissance.

2.2.5 City of Wheatland General Plan

The General Plan seeks to balance the need for growth with the need for the conservation and enhancement of the area's natural resources, frequently in cooperation with other agencies. The following goals of the General Plan establish the framework for protection of valuable biological resources in the Wheatland area.

Goal 8.A – To protect and enhance the natural quantity and qualities of the Wheatland area's rivers, creeks, sloughs, and groundwater.

Goal 8.B – To protect, restore, and enhance habitat that support fish and wildlife species so as to maintain populations at viable levels.

Goal 8.C – Like fish and wildlife habitat, the diverse stands of vegetation in Wheatland include both native and non-native species. Policies in this section support the preservation of important plant species and promote the use of native species, where possible in new development and landscaping.

2.2.6 Oak Woodlands Conservation Law

The City of Wheatland does not have an oak tree preservation ordinance, but impacts to oak trees are subject to regulation under CEQA pursuant to the Oak Woodlands Conservation Law, Public Resources Code, adopted January 1, 2005. Oak woodland is defined as a habitat with over 10 percent of the canopy cover comprised of native oak trees in the genus *Quercus* with a diameter at breast height (DBH) greater than 5 inches.

3.0 METHODS

3.1 Literature Review

ECORP biologists performed a review of existing available information for the Study Area. Literature sources included current and historical aerial imagery, previous biological studies conducted for the area (if any), topographic mapping, soil survey mapping available from the NRCS *Web Soil Survey*, and USFWS National Wetlands Inventory (NWI) mapping. ECORP reviewed the following resources to identify special-status plant and wildlife species that have been documented in or near the Study Area:

- CDFW’s California Natural Diversity Database (CNDDB) data for the “Sheridan, California” and “Wheatland, California” 7.5-minute quadrangles and the surrounding ten quadrangles (CDFW 2023a);
- CNPS Rare Plant Inventory data for the “Sheridan, California” and “Wheatland, California” 7.5-minute quadrangles and the surrounding ten quadrangles (CNPS 2023a);
- USFWS Information for Planning and Consultation (IPaC) Resource Report List for the Study Area (USFWS 2023);
- NMFS Resources data for the “Sheridan, California” and “Wheatland, California” 7.5-minute quadrangles (National Oceanic and Atmospheric Administration [NOAA] 2016).

The results of the database queries are provided in Appendix A. Each special-status species identified in the literature review is evaluated for its potential to occur in the Study Area in Section 4 based on available information concerning species habitat requirements and distribution, occurrence data, and the findings of the site reconnaissance.

3.2 Site Reconnaissance

ECORP biologists Keith Kwan and Jed Dowell conducted the site reconnaissance visit on September 26, 2023. The biologists visually assessed the Study Area while walking meandering transects through all portions of the site. Areas that were not accessible by foot were scanned using binoculars. The following biological resource information was collected:

- Characteristics and approximate boundaries of vegetation communities and other land cover types;
- Plant and animal species or their sign directly observed;

- Elderberry (*Sambucus* sp.) shrub locations and characteristics;
- Characteristics and approximate extents of potential aquatic resources observed; and
- Incidental observations of special habitat features such as burrows, active raptor nests, potential bat roost sites.

Vegetation communities were qualitatively assessed and mapped based on dominant plant composition. Vegetation community classification was based on the classification systems presented in the MCV. Special attention was given to identifying those portions of the Study Area with the potential to support special-status species or sensitive habitats. Data were recorded on a Global Positioning System (GPS) unit, field notebooks, and/or maps. Photographs were taken during the survey to provide visual representation of the conditions within the Study Area.

3.3 Valley Elderberry Longhorn Beetle Survey

ECORP biologists Keith Kwan and Jed Dowell conducted an additional protocol-level valley elderberry longhorn beetle (VELB) survey on November 14, 2023 in accordance with guidelines promulgated by the USFWS *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017b). This survey was conducted within the entire Study Area and accessible areas within a 165-foot buffer of the Study Area. The biologists walked meandering transects throughout Survey Area woody vegetation land covers to ensure complete site coverage. All elderberry shrubs with at least one stem measuring one inch or greater in diameter at ground level were mapped with a Global Positioning System unit capable of sub-meter accuracy. The habitat, approximate height, and health were assessed and noted for each elderberry shrub, and stems were inspected for the presence of VELB and VELB exit holes.

4.0 RESULTS

4.1 Site Characteristics and Land Use

The Study Area is located immediately south of the developed portions of the city of Wheatland and is currently undeveloped but was mass graded for residential development in 2006. Building pads and street layout are evident but no infrastructure or hardscape were installed or constructed. The site appears to have been left fallow since then, except for a farmed portion immediately adjacent to SR-65. The farmed area appears to have been a hay crop. The fallowed area that was previously mass graded was recently disced but appears to be dominated by weedy non-native grasses and forbs. A short reach of the Bear River is located within the southern portion of the Study Area and includes a narrow band of riparian scrub. A narrow corridor of Himalayan blackberry is found along the northern Study Area boundary and appears to be associated with an offsite drainage.

Two constructed detention basins are located in the northern portion of the Study Area. These basins appear to have been constructed as part of the mass grading that occurred in 2006. They appear to have been lined when constructed but the lining is deteriorating. The vegetation community within the basins are upland weeds that are common to disturbed non-native grasslands. No apparent wetland hydrologic indicators were observed during the site reconnaissance visit. A few sandbar willows (*Salix exigua*) are present and likely supported by potentially shallow groundwater at this location.

The Study Area is situated at an elevational range of approximately 75 to 100 feet above mean sea level in the Sacramento Valley of the California floristic province (Jepson eFlora 2023). The average winter low temperature is 39.0 degrees Fahrenheit (˚F) and the average summer high temperature is 93.6 ˚F; the average annual precipitation is approximately 20.07 inches at the Marysville Airport station, which is approximately nine miles northeast of the Study Area (NOAA 2023).

The Study Area primarily includes disturbed annual grassland, riparian scrub and a small grove of valley oak (*Quercus lobata*) trees. Vegetation communities and plant species composition are described in further detail below.

Land uses surrounding the Study Area include agricultural lands, rural residential and residential development. The Wheatland water treatment plant is located offsite in the southwest corner of the Study Area. Figure 2 provides an overview of the Project setting.

Representative photographs of the Study Area are provided in Appendix B.

4.2 Soils and Geology

According to the *Web Soil Survey*, the following 11 map units are delineated within the Study Area (NRCS 2023) (Figure 3):

- 117 – Columbia fine sandy loam, 0 to 2 percent slopes, MLRA 17;
- 136 – Holillipah sandy loam, 0 to 2 percent slopes;
- 137 – Columbia fine sandy loam, 0 to 1 percent slopes;
- 141 – Conejo loam, 0 to 1 percent slopes, MLRA 17;
- 169 – Horst sandy loam, 0 to 1 percent slopes;
- 178 – Riverwash;
- 192 – Xerofluvents, sandy;
- 193 – Xerofluvents, occasionally flooded;
- 194 – Xerofluvents, frequently flooded;
- 198 – Water;
- 208 – Redding gravelly loam, 0 to 8 percent slopes, MLRA 17

The Columbia series consists of very deep, moderately well drained soils formed in alluvium from mixed sources. These soils are on flood plains and natural levees and have slopes of 0 to 8 percent.

Sources: ESRI, Maxar (2022), Sutter County, Yuba County

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Aerial_Maps\HOE Aerial Maps.aprx - HOE Aerial 20230922 (kedwards - 11/10/2023)

Map Date: 11/10/2023

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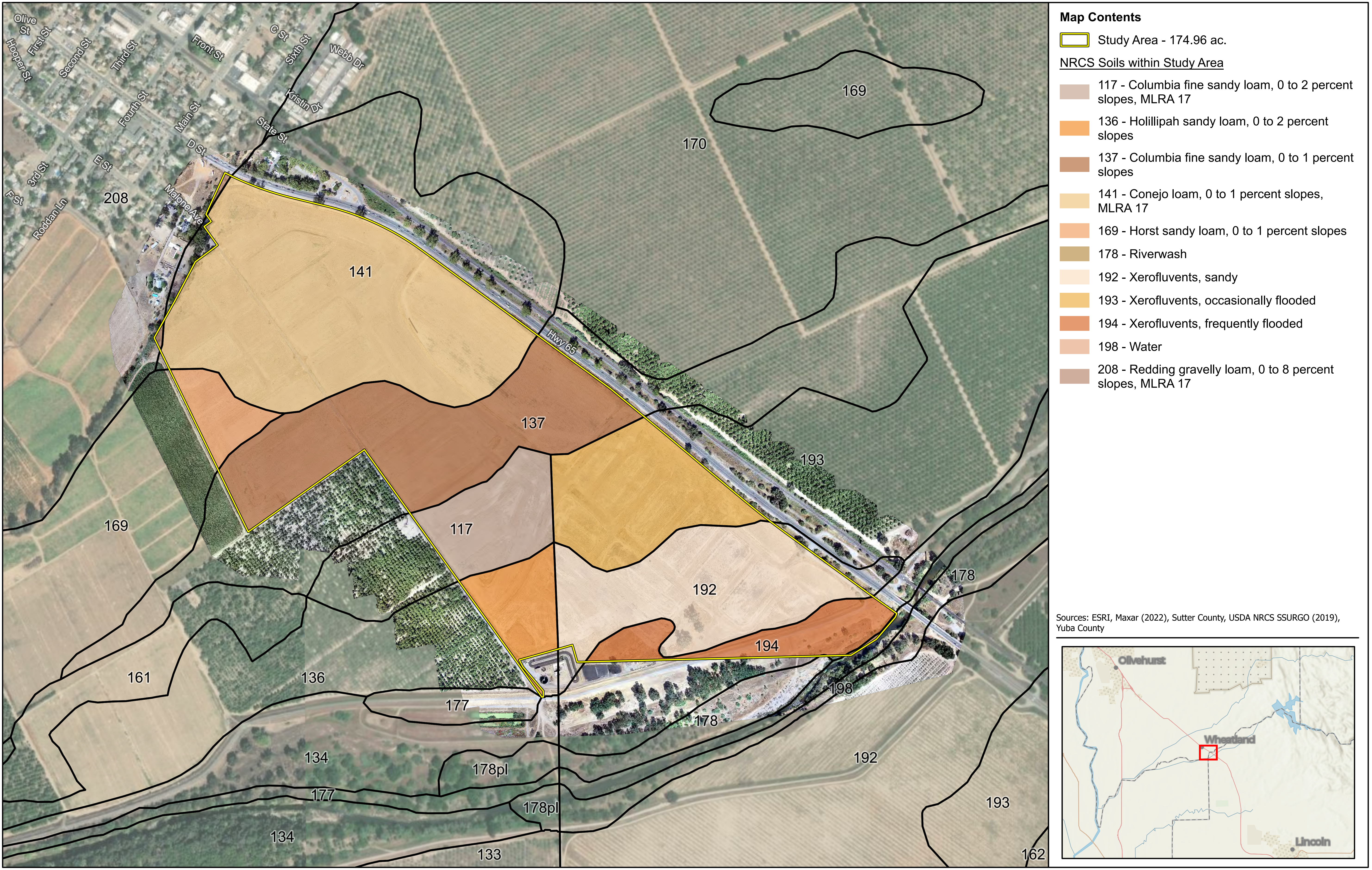
Scale in Feet
0 300 600

Figure 2. Aerial

2023-183 Heritage Oaks East



Map Contents

▭ Study Area - 174.96 ac.

NRCS Soils within Study Area

■	117 - Columbia fine sandy loam, 0 to 2 percent slopes, MLRA 17
■	136 - Holillipah sandy loam, 0 to 2 percent slopes
■	137 - Columbia fine sandy loam, 0 to 1 percent slopes
■	141 - Conejo loam, 0 to 1 percent slopes, MLRA 17
■	169 - Horst sandy loam, 0 to 1 percent slopes
■	178 - Riverwash
■	192 - Xerofluvents, sandy
■	193 - Xerofluvents, occasionally flooded
■	194 - Xerofluvents, frequently flooded
■	198 - Water
■	208 - Redding gravelly loam, 0 to 8 percent slopes, MLRA 17

Sources: ESRI, Maxar (2022), Sutter County, USDA NRCS SSURGO (2019), Yuba County

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Soils_and_Geology\HOE Soils and Geology.aprx - HOE Soils 20230922 (kedwards - 11/10/2023)

Map Date: 11/10/2023

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Figure 3. Natural Resources Conservation Service Soils

2023-183 Heritage Oaks East

The Holillipah series consists of stratified very deep, somewhat excessively drained soils that formed in alluvium from mixed sources. Holillipah soils are on flood plains and alluvial fans and have slopes of 0 to 2 percent.

The Conejo series consists of very deep, well drained soils that formed in alluvium from basic igneous or sedimentary rocks. Conejo soils are on alluvial fans and stream terraces. Slopes range from 0 to 9 percent.

The Horst series consists of very deep, well drained soils formed in alluvium from mixed rock sources. These soils are on stream terraces with slopes of 0 to 2 percent.

The Riverwash unit consists of sandy and gravelly alluvium parent material. The Xerofluvents, sandy and Xerofluvents, frequently flooded units consist of alluvium parent material. The Xerofluvents, occasionally flooded unit consists of alluvium derived from mixed rocks parent material.

The Redding series consists of moderately deep to duripan, well or moderately well drained soils that formed in alluvium derived from mixed sources. They are on nearly level or dissected fan remnants. Slopes are 0 to 30 percent.

Table 1 provides an overview of the soil series mapped within the Study Area and key features of the soil series, such as hydric rating or presence of serpentine or gabbroic soil material (Horton 2017). No soils derived from serpentinite or gabbroic parent materials are mapped within the Study Area.

Table 1. Soil Series Mapped in the Study Area

Map Unit	Key Features
117 – Columbia fine sandy loam, 0 to 2 percent slopes, MLRA 17	None
136 – Holillipah sandy loam, 0 to 2 percent slopes	None
137 – Columbia fine sandy loam, 0 to 1 percent slopes	Hydric components: Columbia, fine sandy loam, drained (flood plains); Holillipah (flood plains); Feather (flood plains); and Shanghai (flood plains)
141 – Conejo loam, 0 to 1 percent slopes, MLRA 17	None
169 – Horst sandy loam, 0 to 1 percent slopes	Hydric components: Hollipah (flood plains) and Columbia (flood plains)
178 – Riverwash	Hydric
192 – Xerofluvents, sandy	None
193 – Xerofluvents, occasionally flooded	None
194 – Xerofluvents, frequently flooded	Hydric
198 – Water	None
208 – Redding gravelly loam, 0 to 8 percent slopes, MLRA 17	Hydric components: Unnamed, ponded (fan remnants)

Note: MLRA = Major Land Resource Area

4.3 Vegetation Communities and Land Cover Types

Vegetation communities and land cover types within the Study Area are described in the following sections, as observed during the site reconnaissance. A list of plants observed onsite can be found in Appendix C. The approximate extent of vegetation communities and land cover types are depicted on Figure 4.

4.3.1 Disturbed Annual Grassland - Upland Mustard or Star-Thistle Fields

This disturbed grassland community is found throughout the vast majority of the Study Area, which was historically mass graded and appears to be periodically disked for weed abatement and fire fuels reduction. Dominant plants found in this community include a variety on non-native naturalized weedy upland species including prickly lettuce (*Lactuca serriola*), wild oats (*Avena* spp.), yellow star-thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), field bindweed (*Convolvulus arvensis*), and milk thistle (*Silybum marianum*).

The grassland can be characterized as *Brassica nigra-Centaurea solstitialis* Herbaceous Semi-Natural Alliance, Upland Mustards or Star-Thistle Fields (CNPS 2023b). Semi-natural alliances are strongly dominated by non-native plants that have become naturalized in California, do not have state rarity rankings, and are not considered sensitive natural communities.

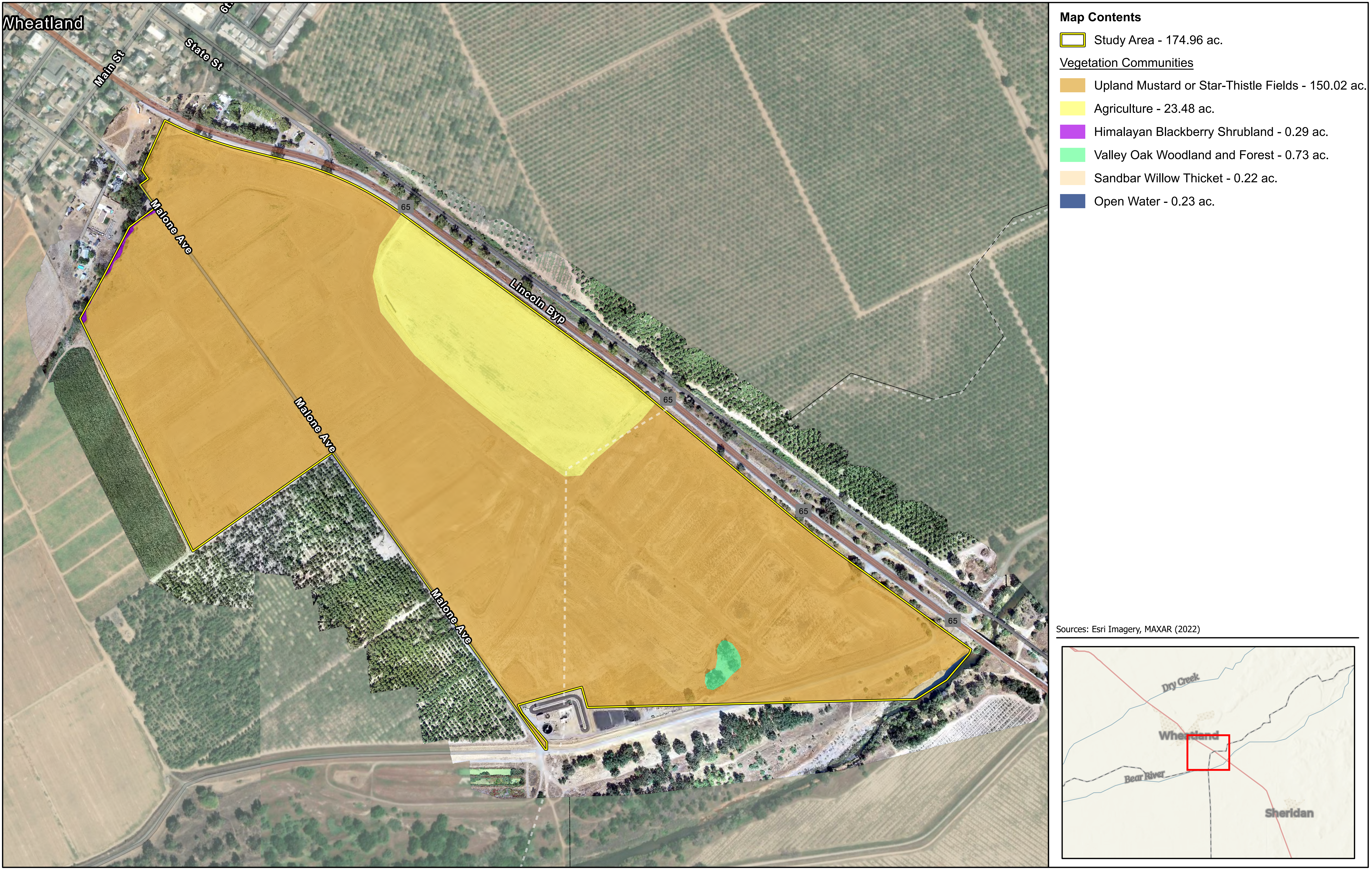
4.3.2 Riparian Scrub

There are two areas within the Study Area that support riparian scrub habitat. A narrow corridor of riparian vegetation is found along the banks of the Bear River in the southern portion of the Study Area. This riparian area is dominated by sandbar willow and Himalayan blackberry (*Rubus armeniacus*) with scattered white alder (*Alnus rhombifolia*), common buttonbush (*Cephalanthus occidentalis*), coyote brush (*Baccharis pilularis*), and rattlebox (*Sesbania punicea*). This riparian community can be characterized as *Salix exigua* Shrubland Alliance, Sandbar willow thickets (CNPS 2023b).

A second riparian community is found along the northern boundary of the Study Area. This vegetation community appears to be associated with an offsite drainage. The dominant plant in this community is Himalayan blackberry, with a few scattered valley oaks and willows (*Salix* spp.). This riparian community can be characterized as *Rubus armeniacus* Shrubland Semi-Natural Alliance, Himalayan blackberry riparian scrub and is not considered a sensitive natural community (CNPS 2023b).

4.3.3 Valley Oak Woodland and Forest

The small grove of valley oaks onsite likely does not meet minimum standards of a vegetation community. However, it has been included in this discussion since it provides wildlife habitat, particularly potentially nesting birds and roosting bats. This community is dominated by mature oak trees with and understory of weedy herbaceous plants such as wild oats, ripgut brome (*Bromus diandrus*), Italian thistle, prickly lettuce, and Italian ryegrass (*Festuca perennis*).



Map Contents

☐ Study Area - 174.96 ac.

Vegetation Communities

🟧 Upland Mustard or Star-Thistle Fields - 150.02 ac.

🟨 Agriculture - 23.48 ac.

🟪 Himalayan Blackberry Shrubland - 0.29 ac.

🟩 Valley Oak Woodland and Forest - 0.73 ac.

⬜ Sandbar Willow Thicket - 0.22 ac.

🟦 Open Water - 0.23 ac.

Sources: Esri Imagery, MAXAR (2022)

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Vegetation_and_LandCover\HOE Veg Community Map.aprx - HOE Vegetation Communities 20231011 (kedwards - 11/10/2023)

Map Date: 11/10/2023

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Scale in Feet
0 500

Figure 4. Vegetation Communities

2023-183 Heritage Oaks East

4.3.4 Agriculture

The agricultural land cover type is located along SR-65 and is comprised of hay crops. This disturbed land cover type is characterized by monoculture of various rotated crop types that are annually harvested. Non-native weedy vegetation similar to the disturbed grassland described above can be found along the borders of the field.

4.3.5 Open Water

The Bear River is a stream located along the southern boundary of the Study Area. According to the USGS maps, it is a perennial stream, but may be seasonal during periods of extended drought.

4.4 Aquatic Resources

A preliminary aquatic resource assessment has been conducted for the Study Area. This was a reconnaissance-level assessment, so it was not performed in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). Aquatic resources found during this assessment included was limited to the Bear River; no other aquatic resources, including wetlands, were found onsite (Figure 5). Since this was a preliminary assessment, aquatic resources onsite have not been verified by the USACE or the Central Valley RWQCB and jurisdictional status of waters (Waters of the U.S. and/or Waters of the State) has not been determined.

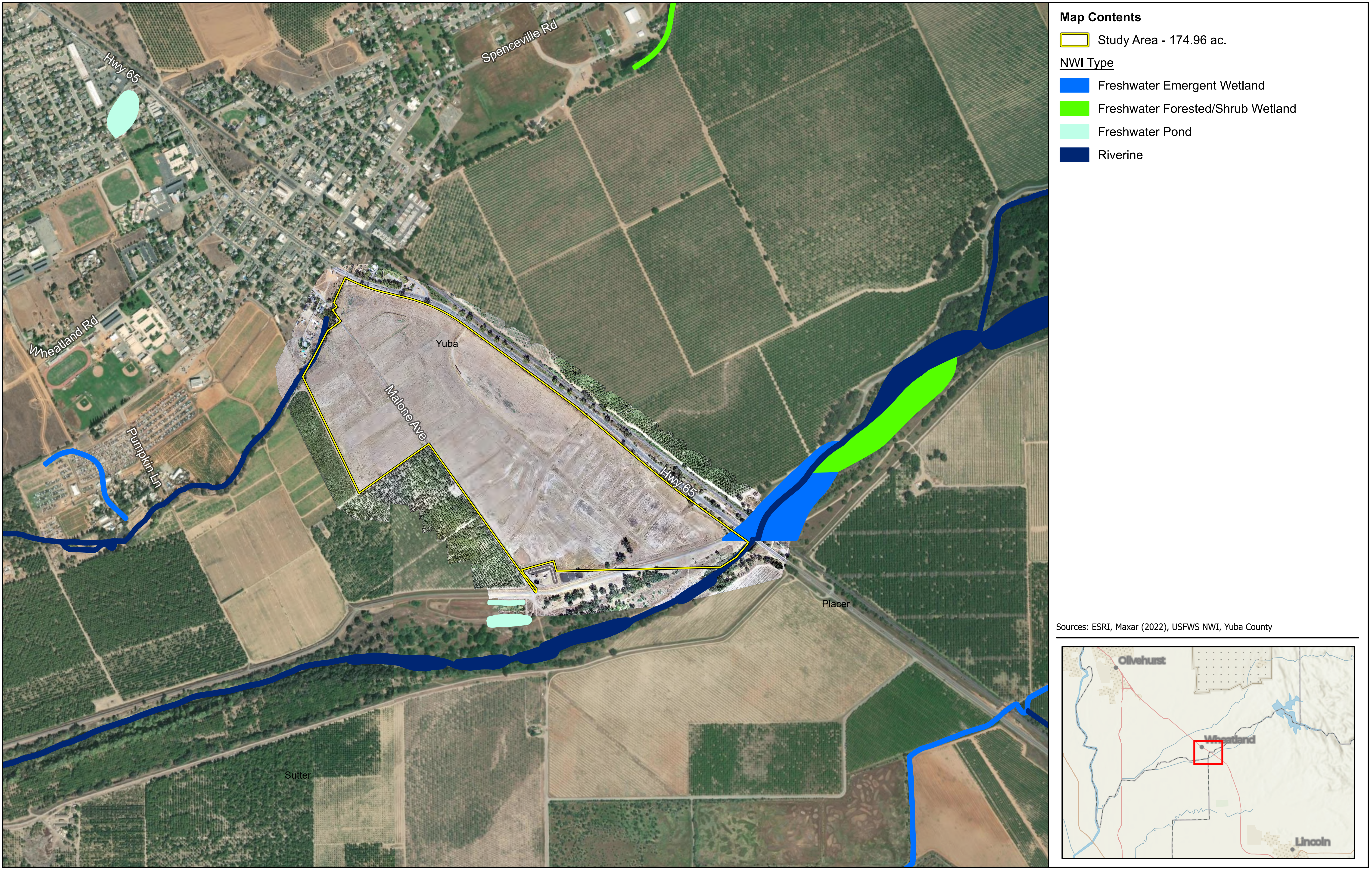
Review of the NWI showed freshwater emergent wetland and riverine aquatic features within the Study Area (Figure 6). These features are associated with the Bear River corridor and an unnamed offsite drainage feature along the northern boundary of the Study Area (USFWS 2017a).

4.4.1 Bear River

A short reach of the Bear River, just west or downstream of SR-65, occurs within the Study Area. According to the USGS quadrangle, the Bear River is a perennial stream. It was flowing during the September 2023 site visit. This reach of the Bear River is approximately 40-50 feet wide with some steeply eroded banks with a narrow floodplain contained within levees. Riparian scrub vegetation is patchily distributed between denuded stretches that have been impacted by human disturbances (e.g., fishing).

4.5 Wildlife

The vegetation communities in the Study Area provide habitat for a variety of common and special-status wildlife species. The vast majority of the Study Area is disturbed grassland and agricultural field. These communities likely do not support breeding habitat for many species but would be foraging habitat for a number of birds, raptors and many passerines. The relatively narrow and small patches of riparian scrub vegetation along the Bear River may support limited breeding habitat for some birds and cover for wildlife small mammals and meso-carnivores. A list of wildlife species observed in the Study Area during the site reconnaissance is provided in Appendix D.



Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Aquatic_Resources\HOE Aquatic Resources.aprx - HOE NWI 20231016 (kedwards - 11/10/2023)

Map Date: 11/10/2023

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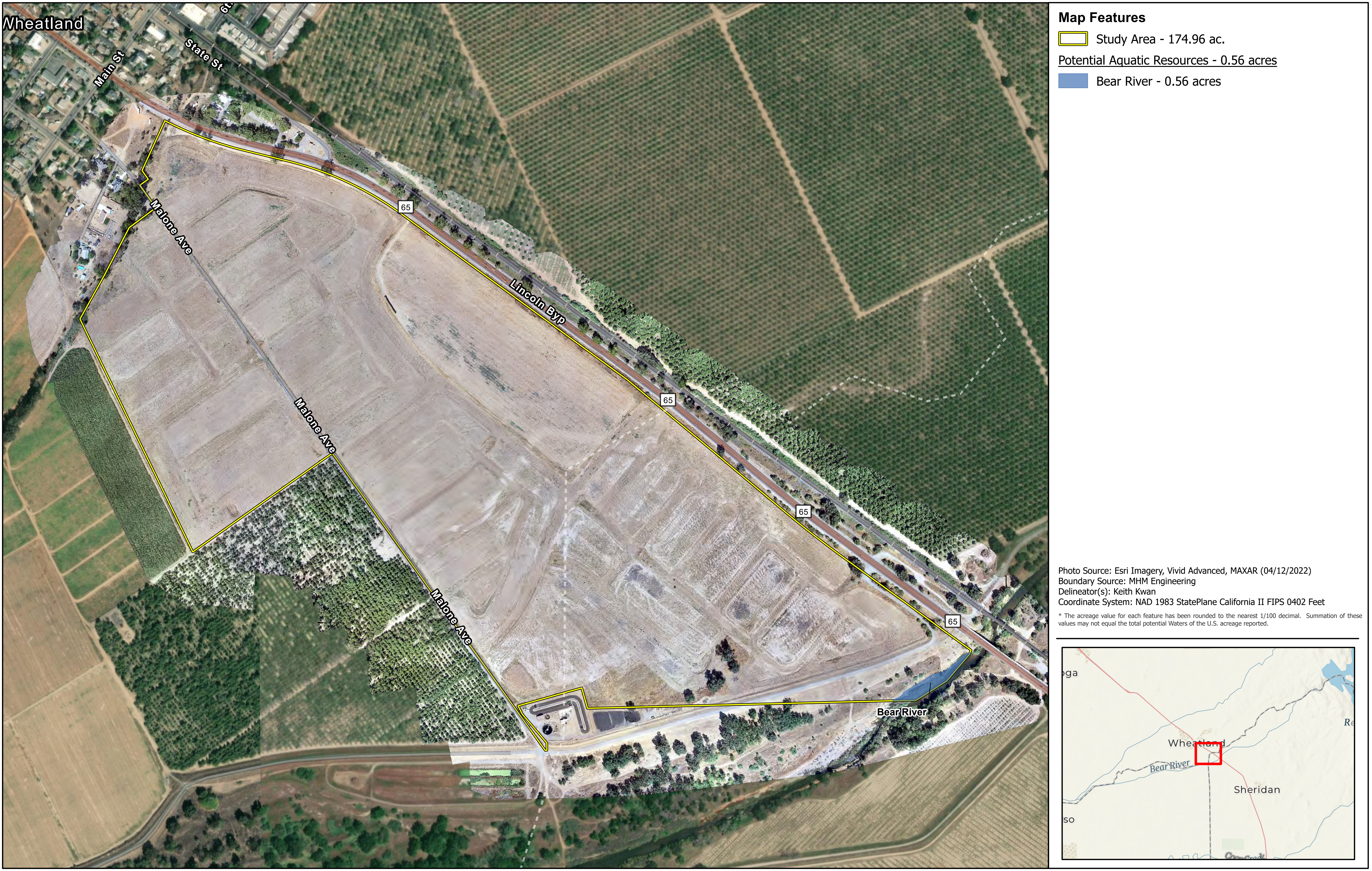
Figure 5. National Wetlands Inventory

2023-183 Heritage Oaks East

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Aquatic_Resources\HOE Aquatic Resources.aprx - HOE Preliminary Wetland Assessment 20231006 (kedwards - 11/10/2023)



Map Features

▭ Study Area - 174.96 ac.

Potential Aquatic Resources - 0.56 acres

🟦 Bear River - 0.56 acres

Photo Source: Esri Imagery, Vivid Advanced, MAXAR (04/12/2022)
Boundary Source: MHM Engineering
Delineator(s): Keith Kwan
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

* The acreage value for each feature has been rounded to the nearest 1/100 decimal. Summation of these values may not equal the total potential Waters of the U.S. acreage reported.

Map Date: 11/10/2023

ECORP Consulting, Inc.
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Scale in Feet
0 500

Figure 6. Aquatic Resources Delineation

2023-183 Heritage Oaks East

4.6 Special-Status Species

Table 2 presents the list of special-status plant and animal species identified through the literature review. For each species, the table provides the listing status, a brief description of habitat requirements and/or species ecology, a determination of the potential to occur within the Study Area, and the rationale for that determination. The potential for each species to occur onsite was assessed using the following criteria:

- *Present* – Species was observed during the site visit or is known to occur within the Study Area based on recent documented occurrences within the CNDDB or other literature.
- *Potential to Occur* – Suitable habitat (including soils and elevation requirements) occurs in the Study Area and the species is known or expected to occur in the Project vicinity based on available data sources or professional knowledge/experience.
- *Low Potential to Occur* – Marginal or limited amounts of habitat occur or the species is not known to occur in the vicinity of the Project based on CNDDB records and other available information.
- *Absent* – No suitable habitat (including soils and elevation requirements) and the species is not known to occur within the vicinity of the Project based on CNDDB records and other documentation.

Following the table is a brief description and discussion of each special-status species that was determined to have potential to occur onsite.

Table 2. Potentially Occurring Special–Status Species

Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Plants					
Ferris' milk-vetch *(Astragalus tener* var. *ferrisiae)*	–	–	1B.1	Vernally mesic meadows and seeps and in sub–alkaline flats within valley and foothill grasslands. Elevation: 5'–245' Bloom Period: April–May	Absent. No suitable habitat present within the Study Area.
Mexican mosquito fern *(Azolla microphylla)*	–	–	4.2	Marshes and swamps, ponds or slow–moving bodies of water. Elevation: 100'–330' Bloom Period: August	Absent. No suitable habitat present within the Study Area.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Big-scale balsamroot *(Balsamorhiza macrolepis)*	–	–	1B.2	Chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine soils. Elevation: 150′–5,100′ Bloom Period: March–June	Absent. No suitable habitat present within the Study Area.
Valley brodiaea (*Brodiaea rosea* ssp. *vallicola*)	–	–	4.2	Occurs in old alluvial terraces and silt, sandy, or gravelly soils in vernal pools and swales within valley and foothill grassland. Elevation: 35′–1,100′ Bloom Period: April–May	Absent. No suitable habitat present within the Study Area.
Sierra foothills brodiaea *(Brodiaea sierrae)*	–	–	4.3	Usually found on serpentine or gabbroic soils within chaparral or cismontane woodland. Elevation: 165′–3,215′ Bloom Period: May–August	Absent. No suitable habitat present within the Study Area.
Hispid salty bird's-beak *(Chloropyron molle* ssp. *hispidum)*	–	–	1B.1	Alkaline soils in meadows and seeps, playas, and valley and foothill grasslands. Elevation: 5′–510′ Bloom Period: June–September	Absent. No suitable habitat present within the Study Area.
Brandegee's clarkia *(Clarkia biloba* ssp. *brandegeeae)*	–	–	4.2	Chaparral, cismontane woodlands, and lower montane coniferous forest often along roadcuts. Elevation: 245′–3,000′ Bloom Period: May–July	Absent. No suitable habitat present within the Study Area.
Recurved larkspur *(Delphinium recurvatum)*	–	–	1B.2	Chenopod scrub, cismontane woodland, and valley and foothill grasslands. Elevation: 10′–2,590′ Bloom Period: March–June	Absent. No suitable habitat present within the Study Area.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Dwarf downingia *(Downingia pusilla)*	–	–	2B.2	Mesic areas in valley and foothill grassland, and vernal pools. Species has also been found in disturbed areas such as tire ruts and scraped depressions (CDFW 2023a). Elevation: 5′–1,460′ Bloom Period: March–May	Absent. No suitable habitat present within Study Area.
Stinkbells *(Fritillaria agrestis)*	–	–	4.2	Clay and sometimes serpentine soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 35′–5,100′ Bloom Period: March–June	Absent. No suitable habitat present within the Study Area.
Boggs Lake hedge-hyssop *(Gratiola heterosepala)*	–	CE	1B.2	Marshes, swamps, lake margins, and vernal pools. Elevation: 35′–7,790′ Bloom Period: April–August	Absent. No suitable habitat present within the Study Area.
Woolly rose-mallow *(Hibiscus lasiocarpos* var. *occidentalis)*	–	–	1B.2	Marshes and freshwater swamps. Often in riprap on sides of levees. Elevation: 0′–395′ Bloom Period: June–September	Absent. No suitable habitat present within the Study Area.
Ahart’s dwarf rush *(Juncus leiospermus* var. *ahartii)*	–	–	1B.2	Mesic areas in valley and foothill grassland. Species has an affinity for slight disturbance such as farmed fields (USFWS 2005). Elevation: 100′–750′ Bloom Period: March–May	Absent. No suitable habitat present within the Study Area.
Red Bluff dwarf rush *(Juncus leiospermus* var. *leiospermus)*	–	–	1B.1	Vernally mesic areas in chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools. Elevation: 115′–4,100′ Bloom Period: March–June	Absent. No suitable habitat present within the Study Area.

Table 2. Potentially Occurring Special–Status Species

Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Legenere *(Legenere limosa)*	–	–	1B.1	Various seasonally inundated areas including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages (USFWS 2005). Elevation: 5′–2,885′ Bloom Period: April–June	Absent. No suitable habitat present within the Study Area.
Veiny monardella *(Monardella venosa)*	–	–	1B.1	Heavy clay soils in cismontane woodland and valley and foothill grasslands. Elevation: 195′–1,345′ Bloom Period: May–July	Absent. No suitable habitat present within the Study Area.
Tehama navarretia (*Navarretia heterandra*)	–	–	4.3	Mesic areas in valley and foothill grassland and vernal pools. Elevation: 100′–3,315′ Bloom Period: April–June	Absent. No suitable habitat present within the Study Area.
Pincushion navarretia *(Navarretia myersii* ssp. *myersii)*	–	–	1B.1	Often acidic soils in vernal pools. Elevation: 65′–1,085′ Bloom Period: April–May	Absent. No suitable habitat present within the Study Area.
Hartweg's Golden Sunburst *(Pseudobahia bahiifolia)*	FE	CE	1B.1	Clay, often acidic soils in cismontane woodland, valley and foothill grasslands. Elevation: 50′–490′ Bloom Period: March–April	Absent. No suitable habitat present within the Study Area.
Sanford's arrowhead *(Sagittaria sanfordii)*	–	–	1B.2	Shallow marshes and freshwater swamps. Elevation: 0′–2,135′ Bloom Period: May–October	Absent. No suitable habitat present within the Study Area.
Brazilian watermeal *(Wolffia brasiliensis)*	–	–	2B.3	Assorted shallow freshwater marshes and swamps. Elevation: 65′–330′ Bloom Period: April–December	Absent. No suitable habitat present within the Study Area.
Invertebrates					

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Conservancy fairy shrimp (*Branchinecta conservatio)*	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	Absent. There is not suitable habitat in the Study Area.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	–	–	Vernal pools/wetlands. Survey Period: November–April when surface water is present.	Absent. There is not suitable habitat in the Study Area.
Monarch butterfly (*Danaus plexippus*)	FC	–	–	Overwinters along coastal California in wind-protected groves of eucalyptus, Monterey pine and cypress with nearby nectar and water sources; disperses in spring throughout California. Adults breed and lay eggs during the spring and summer, feeding on a variety of nectar sources; eggs are laid exclusively on milkweed plants.	Absent. There is not suitable overwintering or breeding habitat in the Study Area.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	–	–	Found exclusively on its host plant, the elderberry shrub, in riparian and oak woodland/ oak savannah habitats of California's Central Valley from Shasta to Madera counties.	Potential. Elderberry shrubs are present in the Study Area. See Section 4.6.1.2 for more discussion.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	–	–	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	Absent. There is not suitable habitat in the Study Area.
California linderiella (*Linderiella occidentalis*)	–	–	CNDDB	Vernal pools/wetlands. Survey Period: November-April when surface water is present.	Absent. There is not suitable habitat in the Study Area.
Fish					

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name ***(Scientific Name)***	**ESA**	**CESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Green sturgeon (*Acipenser medirostris*)	FT	–	CDFW: SSC	Anadromous; undammed cold-water rivers having relatively deep pools with large substrates. Survey Period: N/A	Absent. No suitable habitat is present.
Riffle sculpin (*Cottus gulosus*)	–	–	SSC	Riffle sculpins may occupy riffles or pools, though they tend to favor areas that have adequate cover in the form of rocks, logs, or overhanging banks. These fish have similar habitat requirements similar to those of rainbow trout and are often found in association with them. Survey Period: N/A	Potential to occur.
Delta smelt (*Hypomesus transpacificus*)	FT	CE	-	Sacramento-San Joaquin Delta. Survey Period: N/A	Absent. Outside of the known range for the species.
Pacific lamprey (*Lampetra tridentata*)	–	–	SSC	Anadromous; undammed streams rivers, streams, and creeks with gravel spawning substrates. Survey Period: N/A	Potential to occur.

Table 2. Potentially Occurring Special–Status Species					
	Status				
Common Name ***(Scientific Name)***	**ESA**	**CESA/ NPPA**	**Other**	**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
Sacramento hitch (*Lavinia exilicauda exilicauda*)	–	–	SSC	Hitch are most often found in slow warm water, including lakes and quiet stretches of rivers. Hitch are sometimes found in cool and clear, low-gradient streams, hiding among aquatic vegetation in sandy runs or pools. They are the most heat tolerant of the native Central Valley fishes and can withstand water temperatures greater than 30°C under some conditions. They have also been found living in brackish water with salinities as high as 9 ppt. Survey Period: N/A	Low potential to occur
Hardhead (*Mylopharodon conocephalus*)	–	–	SSC	Relatively undisturbed streams at low to mid elevations in the Sacramento-San Joaquin and Russian River drainages. In the San Joaquin River, scattered populations found in tributary streams, but only rarely in the valley reaches of the San Joaquin River. Survey Period: N/A	Low potential to occur.
Steelhead (CA Central Valley DPS) (*Oncorhynchus mykiss irideus*)	FT	–	–	Fast-flowing, well-oxygenated rivers and streams below dams in the Sacramento and San Joaquin River systems. Survey Period: N/A	Potential to occur.
Chinook salmon (Central Valley fall/late fall-run ESU) (*Oncorhynchus tshawytscha*)	–	–	SSC	Undammed rivers, streams, creeks in the Sacramento and San Joaquin River systems. Survey Period: N/A	Potential to occur.

Table 2. Potentially Occurring Special–Status Species

Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Chinook salmon (Central Valley spring-run ESU) (*Oncorhynchus tshawytscha*)	FT	CT	–	Undammed rivers, streams, creeks in the Sacramento and San Joaquin River systems. Survey Period: N/A	Absent. The project site is outside the range of the ESU.
Sacramento splittail (*Pogonichthys macrolepidotus*)	–	–	SSC	San Francisco Bay estuary and Central Valley lakes and rivers. Spawns in upstream floodplains and backwater sloughs. Survey Period: N/A	Low potential to occur.
Longfin smelt (*Spirinchus thaleichthys*)	FC	CT	SSC	Freshwater and coastal estuaries. Survey Period: N/A	Absent. The project site is outside the range of the species.
Amphibians					
California red-legged frog (*Rana draytonii*)	FT	–	SSC	Lowlands and foothills of the northern and southern Coast Ranges and Sierra Nevada. Found in deep standing or flowing water with dense shrubby or emergent riparian vegetation; requires 11-20 weeks of permanent water for larval development. Adults require aestivation habitat to endure summer dry down. Survey Period: January – Sept.	Low potential. There is marginally suitable habitat along Bear River.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Foothill yellow-legged frog Northeast/Northern Sierra Clade (*Rana boylii*)	–	CT	–	Partly shaded shallow streams and riffles in variety of habitats. Needs cobble-sized substrate for egg-laying and at least 15 weeks of permanent water to attain metamorphosis. Can be active all year in warmer locations; become inactive or hibernate in colder climates. Yuba River to Middle Fork American River and Sutter Buttes. Survey Period: May–October.	Absent. There is no suitable habitat in the Study Area.
Western spadefoot (*Spea hammondii*)	–	–	SSC	California endemic species of vernal pools, swales, and seasonal wetlands in grassland, scrub and woodland habitats throughout the Central Valley and South Coast Ranges. Prefers open areas with sandy or gravelly soils. Survey Period: Winter-Spring.	Absent. There is no suitable habitat in the Study Area.
Reptiles					
Northwestern pond turtle (*Actinemys marmorata*)	–	–	SSC	Requires basking sites and upland habitats up to 0.5 km from water for egg laying. Uses ponds, streams, detention basins, and irrigation ditches. Survey Period: April-September	Potential to occur. Suitable habitat occurs in Bear River. Suitable nesting occurs along the riparian corridor.
Giant gartersnake (*Thamnophis gigas*)	FT	CT	–	Freshwater ditches, sloughs, and marshes in the Central Valley. Almost extirpated from the southern parts of its range. Survey Period: April-October	Low potential to occur. Bear River represents marginal habitat due to absence of emergent vegetation for basking.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Birds					
Aleutian cackling goose *(Branta hutchinsii leucopareia)*	De-listed	–	CDFW WL	Overwintering habitat includes mudflats, shallow tidal waters, salt marsh, wet grasslands, freshwater marsh, lakes, reservoirs and rivers (breeds in Alaska on various Aleutian Islands; winters in California's Central Valley, with a small wintering population in southwestern Oregon, and migration staging areas around Humboldt Bay and Crescent City in California and New River bottoms in Oregon. Wintering: October-March	Absent. There is no suitable wintering habitat.
Yellow-billed cuckoo (*Coccyzus americanus*)	FT	CE	–	Breeding habitat is generally open woodland with clearings and low, dense, scrubby vegetation associated with watercourses, and includes desert riparian woodlands with willow, Fremont's cottonwood, alder, walnut, box-elder, and dense mesquite. Nests are generally found in deciduous hardwoods with thick bushes, vines, or hedgerows providing dense foliage within 10 meters (33 feet) of ground; prefer riparian patches of at least 81 hectares (200 acres) (Hughes 2020). Winters in South America. Nesting: June 15-August 15	Absent. There is no suitable breeding habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Black swift *(Cypseloides niger)*	–	–	BCC, SSC	In California, nests from Cascade-Sierra Nevada region south to Tulare and Mono counties; coastal ranges (Santa Cruz south to San Luis Obispo counties), San Gabriel, San Bernardino, and San Jacinto Mountains. Nests on ledges or shallow caves on steep rock faces, usually behind waterfalls. Winter range, unknown, but thought to be northern and western South America, and West Indies. Nesting: May-September	Absent. There is no suitable breeding habitat.
Vaux's swift *(Chaetura vauxi)*	–	–	BCC, SSC	In California, breeds along the coastal zone from Del Norte County south to Santa Cruz County; Yosemite National Park, possibly Warner and White Mountains and Sequoia National Park. Nest in late stage coniferous forests and deciduous forests mixed with coniferous. Winters from central Mexico to South America. Nesting: May-August	Absent. There is no suitable breeding habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Rufous hummingbird *(Selasphorus rufus)*	–	–	BCC	Breeds in British Columbia and Alaska (does not breed in California). Winters in coastal Southern California south into Mexico. Common migrant during March-April in Sierra Nevada foothills and June-August in Lower Conifer to Alpine zone of Sierra Nevada. Nesting habitat includes secondary succession communities and openings, mature forests, parks and residential area. Nesting: April-July	Absent. This species does not breed in the region and there is minimal.
California black rail (*Laterallus jamaicensis coturniculus*)	–	CT	CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties). Nesting: March-September	Absent. There is no suitable habitat.
Greater sandhill crane *(Antigone canadensis tabida)*	–	CT	CFP	Breeds in NE California, Nevada, Oregon, Washington, and BC, Canada; winters from CA to Florida. In winter, they forage in burned grasslands, pastures, and feed on waste grain in a variety of agricultural settings (corn, wheat, milo, rice, oats, and barley), tilled fields, recently planted fields, alfalfa fields, row crops and burned rice fields. Nesting: March-August Wintering: September-March	Low Potential. The disturbed grassland represents marginal winter foraging habitat. There is no potential night roosting habitat onsite.

Table 2. Potentially Occurring Special–Status Species

Common Name (Scientific Name)	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Mountain plover (*Charadrius montanus*)	–	–	BCC, SSC	Breeds in the Great Plains/Midwestern US; winters in California, Arizona, Texas, and Mexico; wintering habitat in California includes tilled fields, heavily grazed open grassland, burned fields, and alfalfa fields. Wintering: September-March	Low Potential. The disturbed grassland represents marginal winter foraging habitat.
Long-billed curlew (*Numenius americanus*)	–	–	BCC, CDFW WL	Breeds east of the Cascades in Washington, Oregon, northeastern California (Siskiyou, Modoc, Lassen counties), east-central California (Inyo County), through Great Basin region into Great Plains. Winters in California, Texas, and Louisiana. Wintering habitat includes tidal mudflats and estuaries, wet pastures, sandy beaches, salt marsh, managed wetlands, evaporation ponds, sewage ponds, and grasslands. Wintering: September-March	Low Potential. The disturbed grassland represents marginal winter foraging habitat.
California gull (nesting colony) *(Larus californicus)*	–	–	BCC, CDFW WL	Nesting occurs in the Great Basin, Great Plains, Mono Lake, and south San Francisco Bay. Breeding colonies located on islands on natural lakes, rivers, or reservoirs. Winters along Pacific Coast from southern British Columbia south to Baja California and Mexico. In California, winters along coast and inland (Central Valley, Salton Sea). Nesting: April-August	Absent. There is no suitable breeding habitat.
American bittern *(Botaurus lentiginosus)*	–	–	CNDDB	Freshwater wetlands with tall, emergent vegetation; rarely in tidal marshes.	Absent. There is no suitable aquatic habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
White-faced ibis *(Plegadis chihi)*	–	–	CDFW WL	Colonial nester; Nests in shallow marshes with islands of emergent vegetation, flooded shoals and mangrove swamps. Nesting: May-August	Absent. There is no suitable aquatic habitat.
White-tailed kite (*Elanus leucurus*)	–	–	CFP	Nesting occurs within trees in low elevation grassland, agricultural, wetland, oak woodland, riparian, savannah, and urban habitats. Nesting: March-August	Potential. Potentially suitable nesting habitat is present.
Golden eagle (*Aquila chrysaetos*)	–	–	CFP, CDFW WL	Nesting habitat includes mountainous canyon land, rimrock terrain of open desert and grasslands, riparian, oak woodland/ savannah, and chaparral. Nesting occurs on cliff ledges, riverbanks, trees, and human-made structures (e.g., windmills, platforms, and transmission towers). Breeding occurs throughout California, except the immediate coast, Central Valley floor, Salton Sea region, and the Colorado River region, where they can be found during Winter. Nesting: February-August.	Low Potential. The disturbed grassland represents marginal foraging habitat. There is no potential nesting habitat onsite.
Northern harrier (*Circus hudsonius*)	–	–	BCC, SSC	Nests on the ground in open wetlands, marshy meadows, wet/lightly grazed pastures, (rarely) freshwater/brackish marshes, tundra, grasslands, prairies, croplands, desert, shrub-steppe, and (rarely) riparian woodland communities. Nesting: April-September	Low Potential. The disturbed grassland represents marginal nesting habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	**CESA/ NPPA**	**Other**		
Cooper's hawk *(Accipiter cooperii)*	–	–	CDFW WL	Nests in trees in riparian woodlands in deciduous, mixed and evergreen forests, as well as urban landscapes. Rosenfield et al. 2020. Nesting: March-July	Potential. Potentially suitable nesting habitat is present.
Bald eagle (*Haliaeetus leucocephalus*)	De-listed	CE	CFP	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands. Nesting: February-September Wintering: October-March	Absent. There is no nesting or foraging habitat onsite.
Swainson's hawk (*Buteo swainsoni*)	–	CT	–	Nesting occurs in trees in agricultural, riparian, oak woodland, scrub, and urban landscapes. Forages over grassland, agricultural lands, particularly during disking/harvesting, irrigated pastures. Nesting: March-August	Potential. Potentially suitable nesting and foraging habitat is present.
Ferruginous hawk (*Buteo regalis*)	–	–	BCC, CDFW WL	Rarely breeds in California (Lassen County); winter range includes grassland and shrubsteppe habitats from Northern California (except northeast and northwest corners) south to Mexico and east to Oklahoma, Nebraska, and Texas. Wintering: September-March	Low Potential. The disturbed grassland represents marginal foraging habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Burrowing owl *(Athene cunicularia)*	–	–	BCC, SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g., prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds. Nesting: February-August	Low Potential. The disturbed grassland represents marginal habitat; periodic disking significantly reduces potential to occur.
Long-eared owl *(Asio otus)*	–	–	BCC, SSC	Nests in open forests, riparian woodland, conifer forests, dense vegetation adjacent to grasslands, shrublands or other open communities. Nesting: March-August Wintering in Central Valley: November-March	Absent. There is no nesting habitat onsite.
Nuttall's woodpecker *(Dryobates nuttallii)*	–	–	BCC	Resident from northern California south to Baja California. Nests in tree cavities in oak woodlands and riparian woodlands. Nesting: April-July	Potential. Potentially suitable nesting habitat is present.

Table 2. Potentially Occurring Special–Status Species

Common Name	**Status**			**Habitat Description/**	
(Scientific Name)	**ESA**	**CESA/ NPPA**	**Other**	**Species Ecology**	**Potential to Occur Onsite**
Least Bell's vireo (*Vireo bellii pusillus*)	FE	CE	–	In California, breeding range includes Ventura, Los Angeles, Riverside, Orange, San Diego, and San Bernardino counties, and rarely Stanislaus and Santa Clara counties. Nesting habitat includes dense, low shrubby vegetation in riparian areas, brushy fields, young second-growth woodland, scrub oak, coastal chaparral and mesquite brushland. Winters in southern Baja California Sur. Nesting: April 1-July 31	Absent. The Study Area is outside the current breeding distribution, and the riparian habitat onsite is too fragmented.
Loggerhead shrike (*Lanius ludovicianus*)	–	–	SSC	Found throughout California in open country with short vegetation, pastures, old orchards, grasslands, agricultural areas, open woodlands. Not found in heavily forested habitats. Nesting: March-July	Potential. Potentially suitable nesting habitat is present.
Yellow-billed magpie (*Pica nuttalli*)	–	–	BCC	Endemic to California; found in the Central Valley and coast range south of San Francisco Bay and north of Los Angeles County; nesting habitat includes oak savannah with large in large expanses of open ground; also found in urban parklike settings. Nesting: April-June	Potential. Potentially suitable nesting habitat is present.
Oak titmouse (*Baeolophus inornatus*)	–	–	BCC	Nests in tree cavities within dry oak or oak-pine woodland and riparian; where oaks are absent, they nest in juniper woodland, open forests (gray, Jeffrey, Coulter, pinyon pines and Joshua tree). Nesting: March-July	Potential. Potentially suitable nesting habitat is present.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Bank swallow (*Riparia riparia*)	–	CT	–	Nests colonially along coasts, rivers, streams, lakes, reservoirs, and wetlands in vertical banks, cliffs, and bluffs in alluvial, friable soils. May also nest in sand, gravel quarries and road cuts. In California, breeding range includes northern and central California. Nesting: May-July	Absent. The reach of the Bear River onsite does not support suitable nesting habitat.
Purple martin (*Progne subis*)	–	–	SSC	In California, breeds along coast range, Cascade-northern Sierra Nevada region and isolated population in Sacramento. Nesting habitat includes montane forests, Pacific lowlands with dead snags; the isolated Sacramento population nests in weep holes under elevated highways/bridges. Winters in South America. Nesting: May-August	Absent. The SR-65 bridge could support potential nesting habitat, but is a significant distance from the nearest purple martin colony that uses bridges.

Table 2. Potentially Occurring Special–Status Species

Common Name ***(Scientific Name)***	**Status**			**Habitat Description/ Species Ecology**	**Potential to Occur Onsite**
	ESA	**CESA/ NPPA**	**Other**		
Lawrence's goldfinch (*Spinus lawrencei*)	–	–	BCC	Breeds in Sierra Nevada and inner Coast Range foothills surrounding the Central Valley and the southern Coast Range to Santa Barbara County east through southern California to the Mojave Desert and Colorado Desert into the Peninsular Range. Nests in arid and open woodlands with chaparral or other brushy areas, tall annual weed fields, and a water source (e.g., small stream, pond, lake), and to a lesser extent riparian woodland, coastal scrub, evergreen forests, pinyon-juniper woodland, planted conifers, and ranches or rural residences near weedy fields and water. Nesting: March-September	Low Potential. The disturbed grassland represents marginal breeding habitat.
Grasshopper sparrow (*Ammodramus savannarum*)	–	–	BCC, SSC	In California, breeding range includes most coastal counties south to Baja California; western Sacramento Valley and western edge of Sierra Nevada region. Nests in moderately open grasslands and prairies with patchy bare ground. Avoids grasslands with extensive shrub cover; more likely to occupy large tracts of habitat than small fragments; removal of grass cover by grazing often detrimental. Nesting: May-August	Absent. There is no suitable breeding habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	**CESA/ NPPA**	**Other**		
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	–	CE	BCC	Resident coastally from Point Conception south into Baja California; coastal salt marsh. Year-round resident; nests March-August	Absent. There is no suitable breeding habitat.
Song sparrow "Modesto" (*Melospiza melodia heermanni*)	–	–	SSC	Resident in central and southwest California, including Central Valley; nests in marsh, scrub habitat. Nesting: April-June	Potential. The riparian scrub onsite represents potential nesting habitat.
Yellow-breasted Chat (*Icteria virens*)	–	–	SSC	Early successional riparian habitats with a well-developed shrub layer and an open canopy. Narrow borders of streams, creeks, sloughs, and rivers. Taller trees like cottonwood (*Populus* sp.) and alder (*Alnus* sp.) are necessary for song perches. Nesting: March-September	Absent. The riparian scrub onsite is too fragmented for this species.
Tricolored blackbird (*Agelaius tricolor*)	–	CT	BCC, SSC	Breeds locally west of Cascade-Sierra Nevada and southeastern deserts from Humboldt and Shasta counties south to San Bernardino, Riverside and San Diego counties. Central California, Sierra Nevada foothills and Central Valley, Siskiyou, Modoc and Lassen counties. Nests colonially in freshwater marsh, blackberry bramble, milk thistle, triticale fields, weedy (mustard, mallow) fields, giant cane, safflower, stinging nettles, tamarisk, riparian scrublands and forests, fiddleneck and fava bean fields. Nesting: March-August	Potential. The riparian scrub onsite represents potential nesting habitat and the disturbed grassland and agricultural lands represent potential foraging habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name *(Scientific Name)*	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	**CESA/ NPPA**	**Other**		
Bullock's oriole (*Icterus bullockii*)	–	–	BCC	Breeding habitat includes riparian and oak woodlands. Nesting: March-July	Potential. Potentially suitable nesting habitat is present.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	–	–	BCC, SSC	Breeds in salt marshes of San Francisco Bay; winters San Francisco south along coast to San Diego County. Nesting: March-July	Absent. There is no suitable breeding habitat.
Yellow warbler (*Setophaga petechia*)	–	–	SSC	Breeding range includes most of California, except Central Valley (isolated breeding locales on Valley floor, Stanislaus, Colusa, and Butte counties), Sierra Nevada range above tree line, and southeastern deserts. Nesting habitat includes riparian vegetation near streams and meadows. Winters in Mexico south to South America. Nesting: May-August	Low Potential. This species does not nest in the region but is common during migration.
Mammals					
Pallid bat *(Antrozous pallidus)*	–	–	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human occupied as well as vacant buildings (WBWG 2023). Survey Period: April-September	Potential. Trees onsite represent potential roosting habitat.

Table 2. Potentially Occurring Special–Status Species

Common Name (Scientific Name)	Status			Habitat Description/ Species Ecology	Potential to Occur Onsite
	ESA	CESA/ NPPA	Other		
Western red bat (*Lasiurus frantzii*)	–	–	SSC	Roosts in foliage of trees or shrubs; Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2023). Survey Period: April-September	Potential. Trees onsite represent potential roosting habitat.

Status Codes:

ESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	ESA listed, Endangered
FT	ESA listed, Threatened
FC	Candidate for ESA listing as Threatened or Endangered
BCC	USFWS Bird of Conservation Concern (USFWS 2021)
CE	CESA- or NPPA listed, Endangered
CT	CESA- or NPPA-listed, Threatened
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5050-reptiles/amphibians)
SSC	CDFW Species of Special Concern
CDFW WL	CDFW Watch List
CNDDB	Species that is tracked by CDFW's CNDDB but does not have any of the above special-status designations otherwise
1B	CRPR/Rare or Endangered in California and elsewhere
2B	CRPR/Plants rare, threatened, or endangered in California but more common elsewhere
4	CRPR/Plants of Limited Distribution – A Watch List
0.1	Threat Rank/Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted

4.6.1 Plants

No special-status plant species were identified as having potential to occur in the Study Area due to current and historic site disturbances (e.g., mass grading, farming).

4.6.2 Invertebrates

One special-status invertebrate species was identified as having potential to occur in the vicinity of the Study Area based on the literature review and site reconnaissance. A brief description of this species is presented in the following sections.

4.6.2.1 Valley Elderberry Longhorn Beetle

The Valley Elderberry Longhorn Beetle (VELB, *Desmocerus californicus dimorphus*) is listed as threatened pursuant to the federal ESA (USFWS 1980) and a Placer County Conservation Program (PCCP) Covered Species. The VELB is completely dependent on its larval host plant, elderberry (*Sambucus* sp.), which occurs in riparian and other woodland and scrub communities (USFWS 1999, 2017b). Elderberry plants, located within the range of the beetle, with one or more stems measuring 1.0 inch or greater in diameter at ground level are considered to be habitat for the species (USFWS 1999). The adult flight season extends from late March through July (USFWS 2017b). The adults feed on foliage and perhaps flowers, mate, and females lay eggs on living elderberry plants during that time (Barr 1991). The first instar larvae bore into live elderberry stems, where they develop for 1 to 2 years feeding on the pith. The fifth instar larvae create exit holes in the stems and then plug the holes and remain in the stems through pupation (Talley et al. 2007). The VELB occurs in metapopulations (subpopulations) throughout the Central Valley (Collinge et. al 2001 as cited in USFWS 2017b). These metapopulations occur throughout contiguous riparian habitat which shift temporarily and spatially based on changing environmental conditions. This temporal and spatial shifting of the metapopulations results in a patchy and ever-changing distribution of the species. Research indicates that dense elderberry shrub clumps in healthy riparian habitat is the primary habitat for the VELB (USFWS 2017b). The beetle’s current distribution extends from Shasta County in the north to Fresno County in the south and includes everything from the valley floor up into the lower foothills (USFWS 2017b). The vast majority of VELB occurrences have been recorded below 500 feet (152 meters), however, rare occurrences have been recorded up to approximately 3,000 feet (USFWS 1999, 2017b).

There are five documented CNDDB occurrences of this species located within 5 miles of the Study Area (CDFW 2023a). During the protocol-level VELB survey, a total of 24 elderberry shrubs were identified within the VELB survey area, which includes the previously defined Study Area and accessible areas within 165 feet (Figure 7). Shrubs documented within the VELB survey area were of variable maturity and condition, often multi-stemmed, and exhibited many root sprouts and resprouts. The easternmost group of elderberry shrubs contained the largest and most mature individuals of the shrubs surveyed with the largest shrub having an estimated main stem diameter of over eight inches. A band of several additional elderberry shrubs were observed to the northeast of SR 65 along the rail corridor but were not surveyed due to access and safety concerns.

Of the 24 shrubs documented in the survey area, 13 occur outside of the Project boundary, and 10 of the shrubs within the Project boundary occur within avoided or preserved portions of the Project area. The remaining shrub is located within proposed development areas in the Project boundary (Figure 7).

Sources: ESRI, Maxar (2022), Yuba County

Map Date: 11/20/2023

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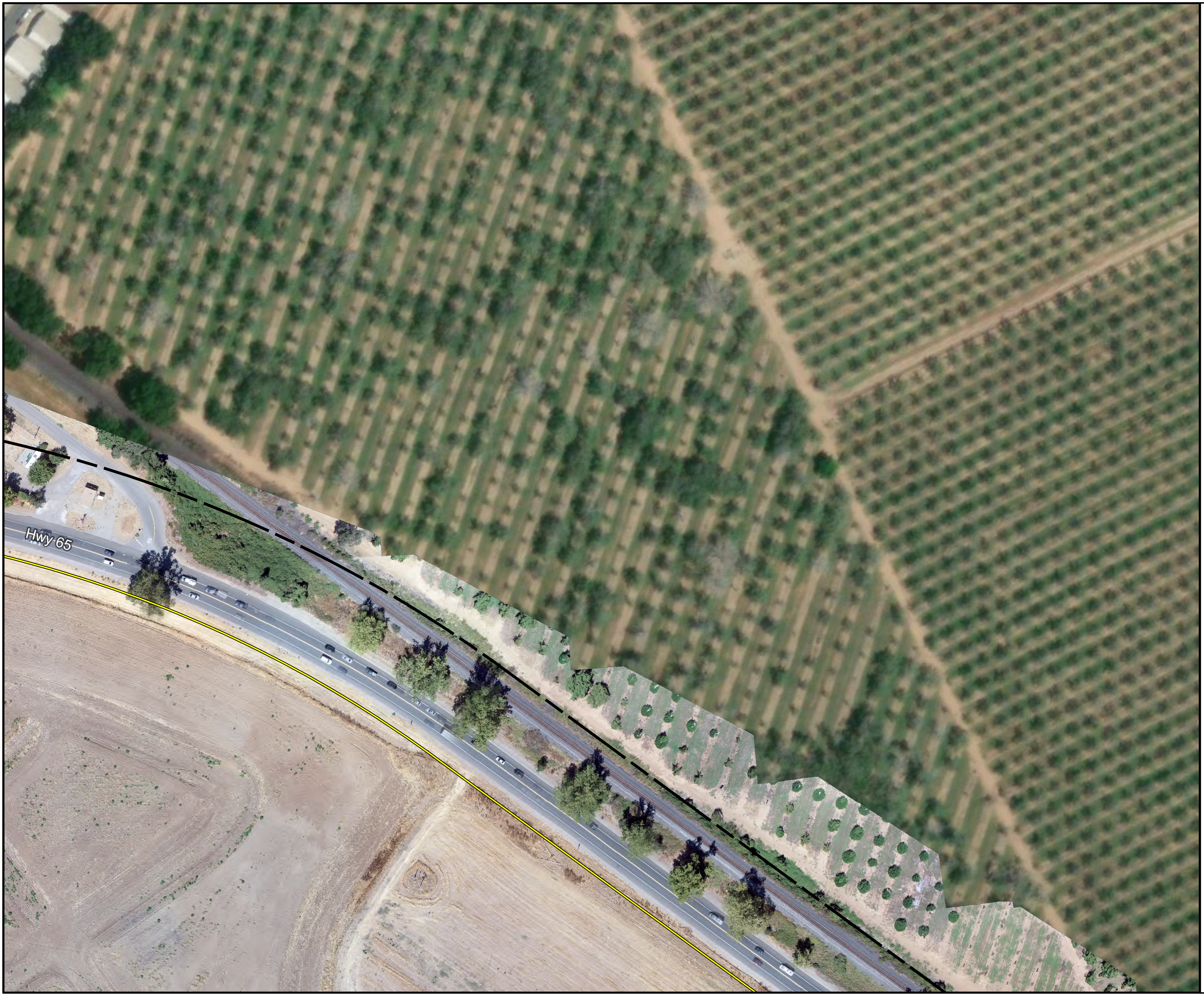
Scale in Feet
0 150

Figure 7. Elderberry Locations

2023-183 Heritage Oaks East

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Biological_Resources\HOE Biological Resources.aprx - HOE Elderberry 20231016 (kedwards - 11/20/2023)

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Biological_Resources\HOE Biological Resources.aprx - HOE Elderberry 20231016 (kedwards - 11/20/2023)

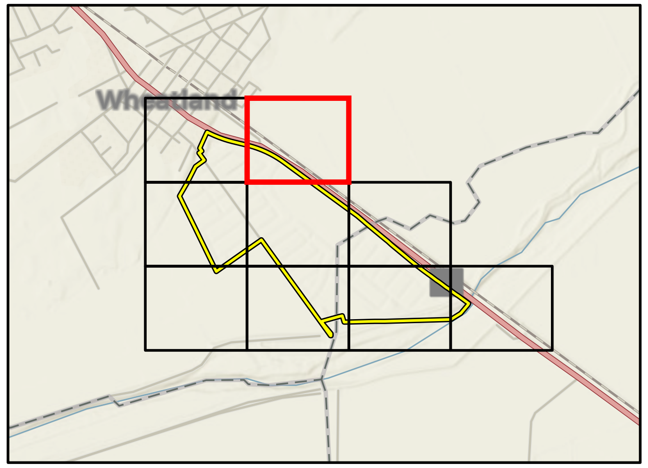


Map Contents

▭ Study Area - 174.96 ac.

▭ 165-ft VELB Survey Buffer

Sources: ESRI, Maxar (2022), Yuba County



Map Date: 11/20/2023

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Scale in Feet
0 150

Figure 7. Elderberry Locations

2023-183 Heritage Oaks East

Sources: ESRI, Maxar (2022), Yuba County

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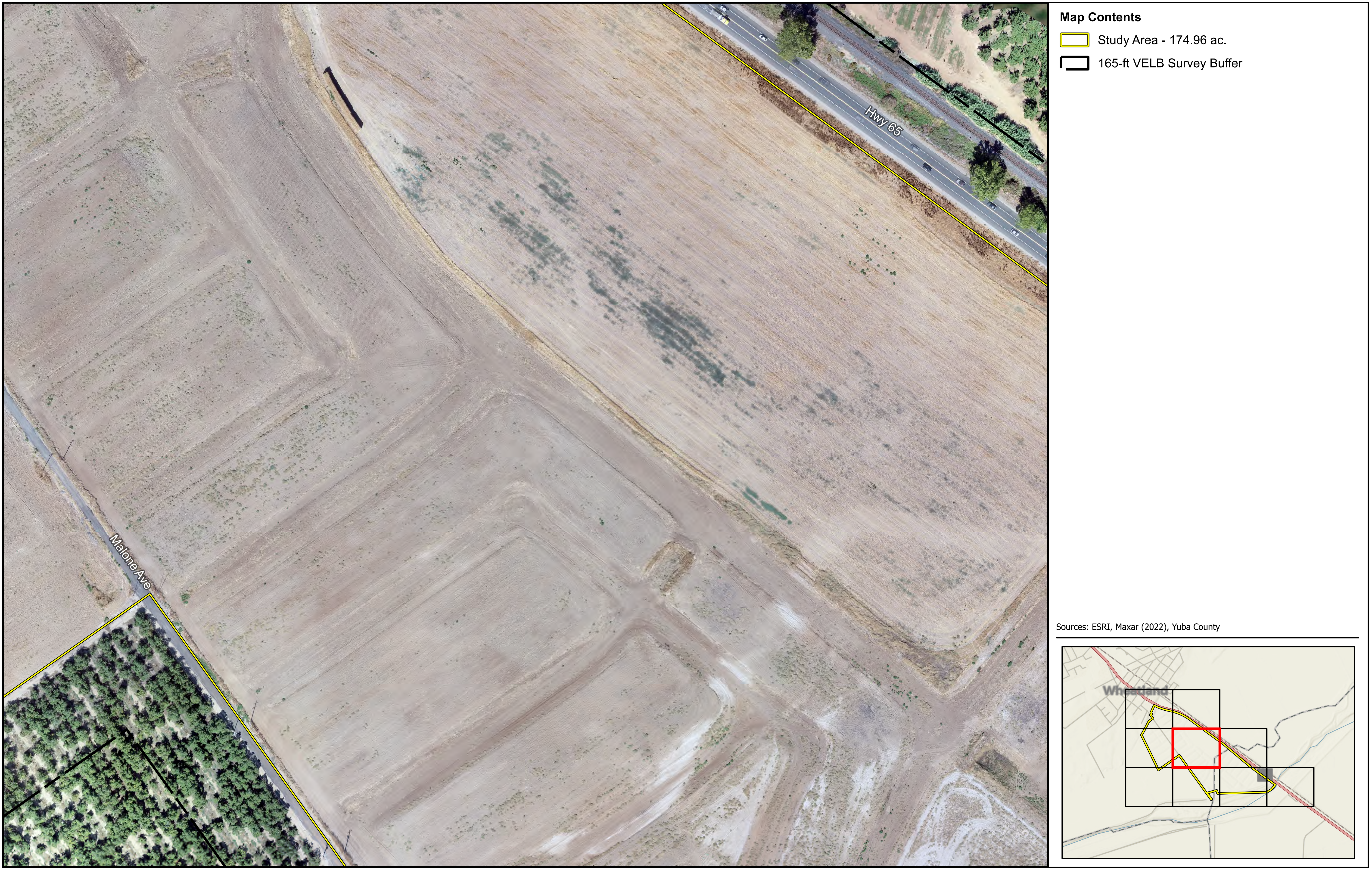

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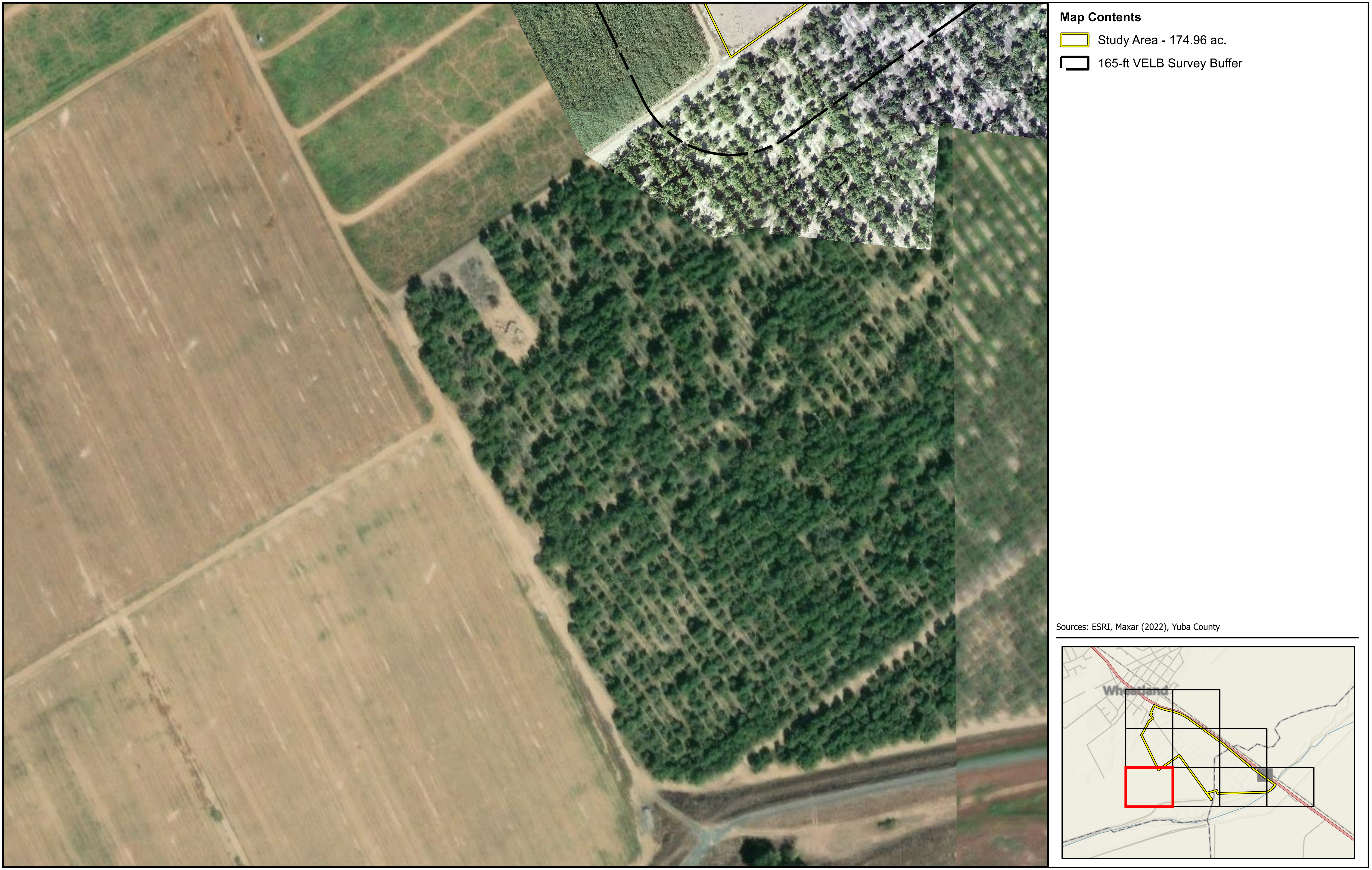

Sources: ESRI, Maxar (2022), Yuba County

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Scale in Feet
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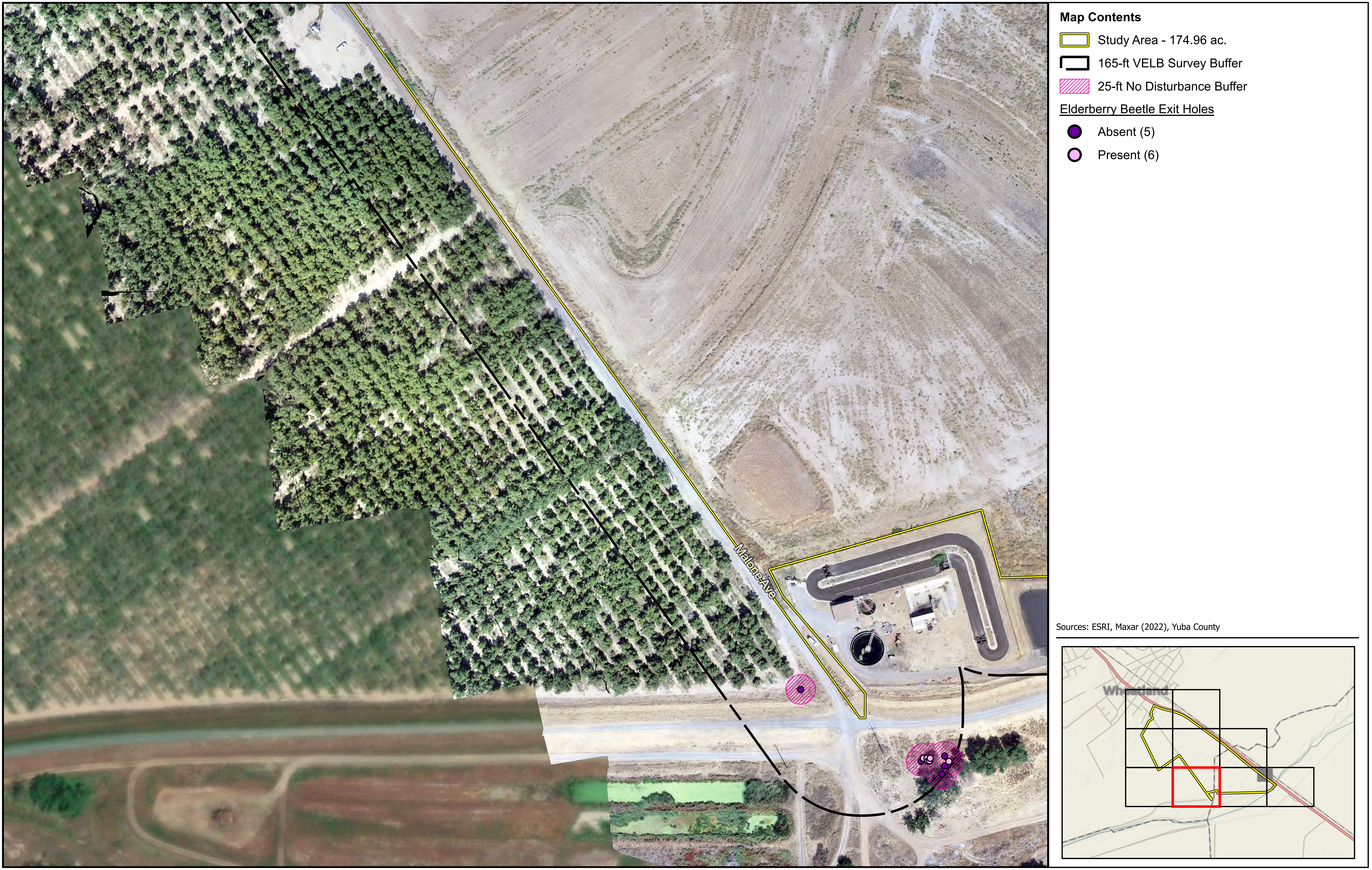
2023-183 Heritage Oaks East



Sources: ESRI, Maxar (2022), Yuba County

Location: N:\2023\2023-183 Heritage Oaks East\MAPS\Biological_Resources\HOE Biological Resources.aprx - HOE Elderberry 20231016 (kedwards - 11/20/2023)

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Sources: ESRI, Maxar (2022), Yuba County

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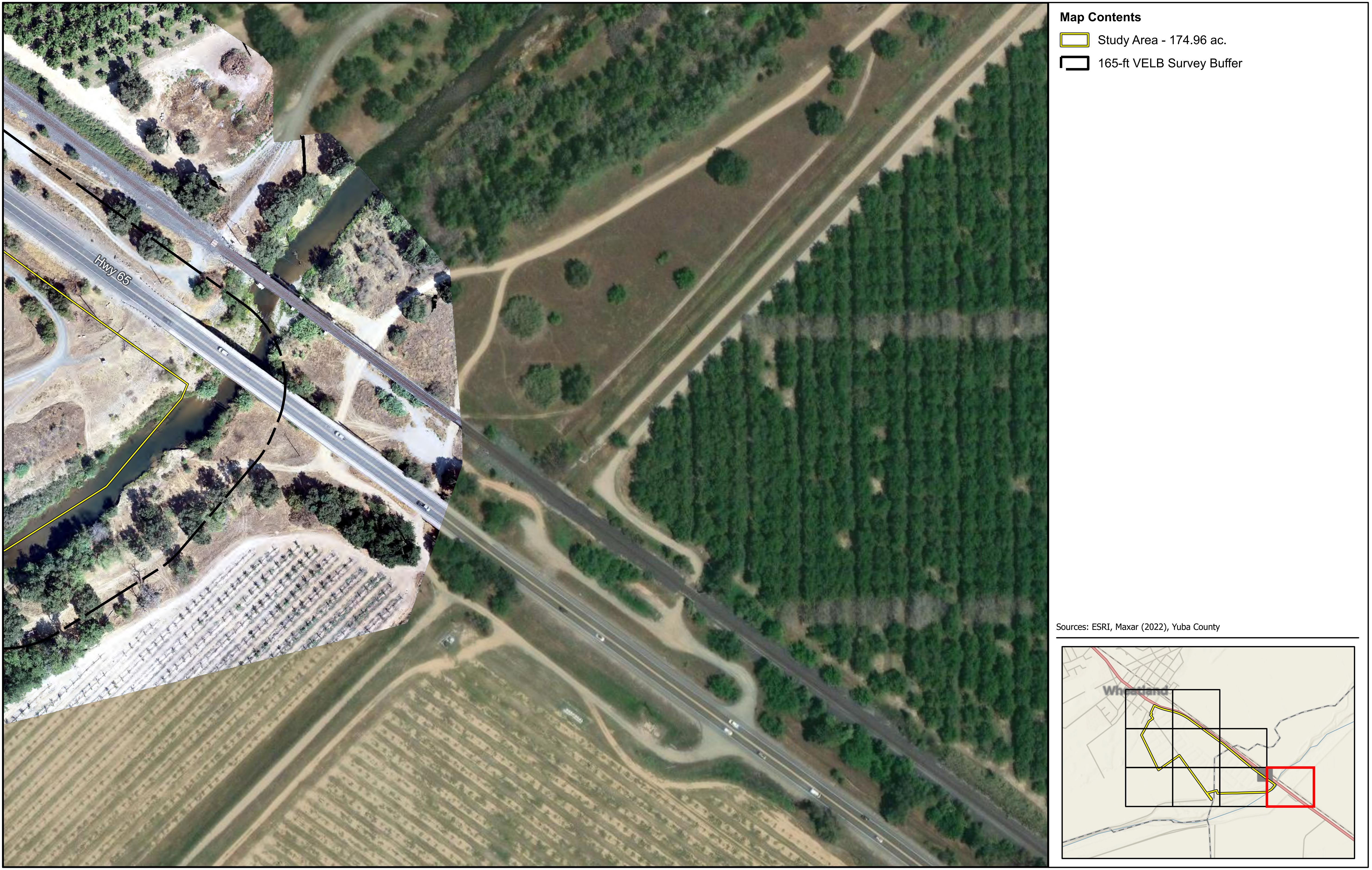
Figure 7. Elderberry Locations

2023-183 Heritage Oaks East



Sources: ESRI, Maxar (2022), Yuba County

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Scale in Feet
0 150

Figure 7. Elderberry Locations

2023-183 Heritage Oaks East

4.6.3 Fish

The Study Area supports potentially suitable or marginal habitat for seven special-status fish, including riffle sculpin (Cottus gulosus), Pacific lamprey (Lempetra tridentata), Sacramento hitch (Lavinia exilicauda exilicauda), hardhead (Mylopharodon conocephalus), Central Valley Distinct Population Segment (DPS) steelhead (Oncorhynchus mykiss irideus), Central Valley fall/late-fall run Evolutionarily Significant Unit (ESU) Chinook salmon (Oncorhynchus tshawytscha), and Sacramento splittail (Pogonichthys macrolepidotus). A brief description of these species follows.

4.6.3.1 Riffle Sculpin

The riffle sculpin is not listed and protected pursuant to either the federal or California ESAs but is considered a CDFW SSC. Riffle sculpin are found in clear and shaded, permanent, cool, moderate gradient headwater streams where riffles and rocky substrates predominate. They are found in isolated watersheds in the Central Valley and central coast. In the Sacramento River drainage, they are present in Putah Creek on the west side and most tributaries on the east side, from the American River north to the upper Sacramento and McCloud rivers (Moyle et al. 2015).

There are no documented CNDDB occurrences of riffle sculpin within 5 miles of the Study Area (CDFW 2023a). The Bear River provides suitable habitat for this species. Therefore, riffle sculpin has potential to occur within the Study Area.

4.6.3.2 Pacific Lamprey

Pacific lamprey is not listed pursuant to either the federal or California ESAs; however, it is designated by CDFW as an SSC. Pacific lampreys occur along the Pacific coast from Hokkaido Island, Japan, through Alaska and south to Rio Santo Domingo in Baja California. Anadromous forms of Pacific lamprey occur below impassible barriers throughout their range. Pacific lampreys occur in California from Los Angeles to Del Norte counties and the rivers in the Central Valley (Moyle 2002; Moyle et al. 2015).

Adult Pacific lampreys are micropredators (i.e., they feed on prey larger than themselves) during their oceanic existence, consuming the body fluids of a variety of fishes. They share many habitat requirements with Pacific salmonids (*Oncorhynchus* spp); particularly, cold, clear water for spawning and incubation. They also require a wide range of habitats across life stages. Lampreys will migrate considerable distances and are stopped only by major barriers such as dams. Pacific lampreys have more diverse life histories than generally recognized: they may have more than one run or individuals that do not migrate to sea within the same river system. However, the general run trend is low numbers of migrants in October and November and higher numbers in the spring (Moyle et al. 2015).

There are no documented CNDDB occurrences of Pacific lamprey within 5 miles of the Study Area (CDFW 2023a). The Bear River provides suitable habitat for this species. Therefore, Pacific lamprey have potential to occur within the Study Area.

4.6.3.3 Sacramento Hitch

Sacramento hitch is not listed pursuant to either the federal or California ESAs; however, it is designated by CDFW as an SSC due to long-term declines in abundance and distribution (Moyle et al. 2015). Major factors that may threaten the abundance and distribution of Sacramento hitch include major dams, water quality degradation associated with agricultural activities, alteration of the Sacramento-San Joaquin River Estuary, and invasive species (Moyle et al. 2015).

Sacramento hitch are relatively large (i.e., up to 35 cm standard length [SL]), deep-bodies cyprinids that occur in warm low-elevation water bodies, including clear streams, turbid sloughs, lakes, and reservoirs (Moyle 2002). They have wide environmental tolerances, capable of withstanding short-term temperatures of nearly 38°C and salinities as high as nine parts per thousand (Moyle 2002). Sacramento hitch are omnivorous, feeding on zooplankton, filamentous algae, and aquatic and terrestrial insects (Moyle et al. 2015). Females typically mature in years two or three, while males mature in years one, two, or three. Spawning typically occurs in riffles of streams and in sloughs after spring rains increase flows and temperatures reach 14 to 18°C (Moyle 2002). Sacramento hitch are broadcast spawners that occur in groups with vigorous splashing. A spawning female releases 9,000 to 63,000 eggs into the water column, which are fertilized by one to five males immediately after their release. Fertilized eggs swell to approximately four times their initial size after settling into the substrate. Larvae hatch in 3 to 7 days at 15 to 22°C and become free-swimming within 3 to 4 days (Moyle et al. 2015).

There are no documented CNDDB occurrences of Sacramento hitch within 5 miles of the Study Area (CDFW 2023a). The Bear River provides marginally suitable habitat for this species. Therefore, Sacramento hitch have low potential to occur within the Study Area.

4.6.3.4 Hardhead

Hardhead (*Mylopharodon conocephalus*) is not listed pursuant to either the federal or California ESAs; however, it is designated by CDFW as an SSC due to declining numbers and small, isolated populations (Moyle et al. 2015). Primary threats to the species include dams and diversions, water quality degradation associated with agricultural activities, and invasive species (Moyle et al. 2015).

Hardhead occur in relatively undisturbed clear and cool (i.e., up to 20°C maximum summer temperature) low- to mid-elevation streams below approximately 1,500 meters (Moyle et al. 2015). Hardhead are primarily bottom-feeding fish that forage on aquatic invertebrates and aquatic vegetation, but will also prey on drifting invertebrates, plankton, algae and terrestrial insects (Moyle et al. 2015). Hardhead reach maturity at age two and spawn primarily in April and May (Moyle 2002). Adult fish migrate into smaller tributary streams and aggregate in pools, returning to their home pools in larger rivers after spawning. Females produce more than 20,000 eggs, which are deposited in sand or gravel substrates in riffles, runs, or heads of pools (Moyle 2002). After hatching, larval fish are believed to remain in near-shore areas with dense cover, gradually moving downstream and into deeper habitats with increased growth.

There are no documented CNDDB occurrences of hardhead within 5 miles of the Study Area (CDFW 2023a). The Bear River provides marginally suitable habitat for this species. Therefore, hardhead have low potential to occur within the Study Area.

4.6.3.5 Steelhead California Central Valley DPS

Central Valley DPS steelhead is listed as threatened under the federal ESA. Steelhead, the anadromous form of rainbow trout, were once abundant in California coastal and Central Valley drainages from the Mexican to Oregon borders. Populations have declined substantially in recent years as a result of habitat loss stemming from dam construction. Existing wild steelhead stocks in the Central Valley are now mostly confined to the upper Sacramento River and its tributaries (McEwan and Jackson 1996).

Adult steelhead generally leave the ocean and begin upstream migration to spawning reaches in tributaries to the Sacramento River system from November through January. Spawning generally occurs from December through April (McEwan and Jackson 1996). Juvenile steelhead rear in their natal streams for 1 to 3 years prior to emigrating from the river. Unlike Chinook salmon, steelhead are iteroparous (are able to spawn repeatedly) and may spawn for up to four consecutive years before dying; however, it is rare for steelhead to spawn more than twice and the majority of repeat spawners are females (Moyle 2002).

The Bear River through the southern portion of the Study Area has been designated a critical habitat for this DPS. The Bear River provides suitable habitat for this species. Therefore, the Central Valley DPS steelhead has potential to occur within the Study Area.

4.6.3.6 Chinook Salmon Central Valley Fall/Late-Fall Run ESU

Chinook Salmon has four different runs during the year. The CDFW lists the Fall/Late-Fall run as a species special concern and is not listed under either the federal or California ESAs. Typical habitat in the Central Valley includes freshwater rivers and streams that are tributaries to the Sacramento and San Joaquin river systems as well as the rivers themselves. They also travel through the Delta and San Francisco Bay on their way to the ocean. Spawning takes place in shallow riffles. Fall-run Chinook salmon migrate into rivers from mid-October through December and spawn from January through mid-April.

There are no documented CNDDB occurrences of this ESU within 5 miles of the Study Area (CDFW 2023a). The Bear River provides suitable habitat for this ESU. Therefore, Fall/Late-fall run Chinook salmon has potential to occur within the Study Area.

4.6.3.7 Sacramento Splittail

Sacramento splittail is not listed pursuant to either the federal or California ESAs; however, it was previously listed as a threatened species by the USFWS in 1999 and was subsequently delisted in 2003 in light of new information regarding the biology and status of the species (Moyle et al. 2004). It is currently designated by CDFW as an SSC. They are primarily found in the Sacramento and San Joaquin river estuaries, especially the Delta and Suisun Marsh.

Sacramento splittail are relatively large (i.e., 40 cm SL) and long-lived (i.e., 7 to 10 years) warm water fish typically found at water temperatures ranging from 5 to 24°C (Moyle 2002) and can tolerate temperatures up to 33°C when acclimated to elevated temperatures (Moyle 2002). Adult splittail typically reach sexual maturity in their second year. Upon reaching maturity, adult splittail migrate upstream from November through February (Moyle 2002). Adults spawn on floodplains or flooded edge habitats in March and April at water temperatures between 14 and 19°C (Moyle 2002) and then move back downstream. Eggs acquire adhesive properties following exposure to water and adhere to vegetation or other benthic substrates. Fertilized eggs generally hatch in 3 to 5 days and larvae begin feeding on plankton soon thereafter. Juvenile splittail inhabit shallow, low-velocity habitats with abundant vegetation as they migrate downstream to the Delta. Emigration through the lower Sacramento River occurs from February through August, with peak emigration occurring from March through June (Moyle 2002). Splittail are benthic foragers that feed primarily on aquatic invertebrates, although detritus may make up a substantial proportion of their diet (Moyle et al. 2015).

There are no documented CNDDB occurrences of Sacramento splittail within 5 miles of the Study Area (CDFW 2023a). The Bear River provides marginally suitable habitat for this species. Therefore, Sacramento splittail have low potential to occur within the Study Area.

4.6.4 Amphibians

The Study Area supports marginally suitable habitat for one special-status amphibian, the California red-legged frog (*Rana draytonii*). A brief description follows.

4.6.4.1 California Red-legged Frog

The California Red-Legged Frog (CRLF) is listed as Threatened pursuant to the ESA, a PCCP covered species, and is a California SSC. The current range and abundance of CRLF is greatly reduced from historic levels, with most remaining populations occurring along the coast from Marin County to Ventura County and in blue oak woodland, foothill pine/oak, and riparian deciduous forests in the foothills of the western slope of the Sierra Nevada (Barry and Fellers 2013).

Breeding habitat includes coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded and backwater portions of streams. Creeks and ponds with dense growths of woody riparian vegetation, especially willows are preferred (Hayes and Jennings 1988). Adult CRLFs use dense, shrubby or emergent riparian vegetation near deep [≥ 0.6 to 0.9 m (2 to 3 feet)], still or slow-moving water, especially where dense stands of overhanging willow and an intermixed fringe of cattail (*Typha* sp.) occur adjacent to open water. CRLFs breed from November through April (Jennings and Hayes 1994), and larvae generally metamorphose by mid to late summer. Upland and riparian areas provide important sheltering habitat during summer when CRLFs aestivate in dense vegetation, burrows, and leaf litter.

There are no documented CNDDB occurrences of CRLF within 5 miles of the Study Area (CDFW 2023a). The Bear River supports marginally suitable habitat for this species due to the patchy nature of the riparian vegetation and presence of predatory fish. As a result, due to the lack of known occurrences in the region and marginally suitable habitat, CRLF is considered to have low potential to occur within the Study Area and is not expected to occur onsite.

4.6.5 Reptiles

The Study Area supports potential and marginal habitat for two special-status reptiles, the northwestern pond turtle and giant gartersnake, respectively. A brief description of these species follows.

4.6.5.1 Northwestern Pond Turtle

The northwestern pond turtle is currently proposed for listing as a threatened species under the federal ESA and has no California ESA status; in addition, it is designated as a CDFW SSC. Northwestern pond turtles occur in a variety of fresh and brackish water habitats including marshes, lakes, ponds, and slow-moving streams (Jennings and Hayes 1994). This species is primarily aquatic; however, they typically leave aquatic habitats in the fall to reproduce and to overwinter (Jennings and Hayes 1994). Deep, still water with abundant emergent woody debris, overhanging vegetation, and rock outcrops is optimal for basking and thermoregulation. Although adults are habitat generalists, hatchlings and juveniles require shallow edge water with relatively dense submergent or short emergent vegetation in which to forage.

Northwestern pond turtles are typically active between March and November. Mating generally occurs during late April and early May and eggs are deposited between late April and early August (Jennings and Hayes 1994). Eggs are deposited within excavated nests in upland areas, with substrates that typically have high clay or silt fractions (Jennings and Hayes 1994). The majority of nesting sites are located within 200 meters (650 feet) of the aquatic sites; however, nests have been documented as far as 400 meters (1,310 feet) from the aquatic habitat.

There are two documented CNDDB occurrences of northwestern pond turtle within 5 miles of the Study Area (CDFW 2023a). The Bear River represents suitable aquatic habitat. In addition, upland habitat adjacent to the Bear River represents suitable upland dispersal and potential nesting habitat. Northwestern pond turtle is considered to have potential to occur within the Study Area.

4.6.5.2 Giant Gartersnake

The giant gartersnake (*Thamnophis gigas*) is listed as a threatened species pursuant to both the California and federal ESAs. The giant gartersnake is one of the most aquatic gartersnakes. It is rarely found far from water and occupies habitats such as marshes and sloughs, irrigation and drainage canals, small lakes and ponds, rice agricultural fields, and low gradient streams. Rice agriculture now provides habitat and supports populations when the seasonally flooded fields and associated water conveyance systems are managed for the species (USFWS 1999), and is one reason giant gartersnake populations in the Sacramento Valley are more robust than those farther south (Halstead et al. 2010). Giant gartersnakes are most active from early spring through mid-fall, and use grassy bank-side habitats for basking and higher elevation uplands for cover and retreat from floodwaters during the inactive winter season. The giant gartersnake is endemic to the floors of the Sacramento and San Joaquin valleys of California and probably occurred historically from Butte County south to Buena Vista Lakes in Lake in Kern County (USFWS 1999).

There are no documented CNDDB occurrences of giant gartersnake within 5 miles of the Study Area (CDFW 2023a). The Bear River represents marginally suitable aquatic habitat because it has moderate gradient. Giant gartersnake is considered to have low potential to occur within the Study Area.

4.6.6 Birds

The Study Area supports potential breeding/nesting habitat for 13 special-status birds and wintering/foraging habitat for an additional six special-status birds. A brief description of the potentially occurring special-status birds is presented in the following sections.

4.6.6.1 Greater Sandhill Crane

The greater sandhill crane (*Antigone canadensis tabida*) is listed as a threatened species by the CDFW and is protected pursuant to the California ESA. In addition, the greater sandhill crane is fully protected pursuant to the California Fish and Game Code. This subspecies nests in northeastern California (Modoc, Siskiyou, Lassen, and Shasta counties and formerly in the Sierra Valley, Sierra, and Plumas counties) (Small 1994) and winters in the Central Valley. Nesting occurs from March through August. Wintering habitat includes wetlands and agricultural fields (Gerber et al. 2020).

There are no documented CNDDB occurrences of greater sandhill crane within 5 miles of the Study Area (CDFW 2023a). The disturbed grassland and agricultural land onsite and in the vicinity of the Study Area provides marginally suitable winter foraging habitat for this species. Therefore, greater sandhill cranes have low potential to occur within the Study Area.

4.6.6.2 Mountain Plover

The mountain plover (*Charadrius montanus*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and an SSC by the CDFW. This species breeding range includes Montana, eastern Colorado, Wyoming, New Mexico, Texas, and Oklahoma; the wintering range extends from northcentral California to Mexico (Knopf and Wunder 2020). Within their wintering range (September through March), which consists primarily of the Sacramento, San Joaquin, and Imperial valleys, mountain plovers can be found in plowed fields, heavily grazed annual grassland, and burned fields (Knopf and Rupert 1995; Knopf and Wunder 2020). Mountain plovers do not nest in California but may occasionally forage within grassland communities (or plowed agricultural fields) during winter.

There are no documented CNDDB occurrences of mountain plover within 5 miles of the Study Area (CDFW 2023a). The disturbed grassland and agricultural land onsite and in the vicinity of the Study Area provides marginally suitable winter foraging habitat for this species. Therefore, mountain plovers have low potential to occur within the Study Area.

4.6.6.3 Long-Billed Curlew

The long-billed curlew (*Numenius americanus*) is not listed in accordance with either the California or federal ESAs but is designated as a BCC by the USFWS and is a CDFW Watch List species. The breeding range of this species includes the Great Plains, Great Basin and intermontane valleys of the western U.S. and southwestern Canada (Dugger and Dugger 2020). In the U.S., their wintering range includes California, Louisiana, and Texas. Winter foraging habitat includes rice fields (flooded and unflooded), managed wetlands, evaporation ponds, sewage ponds, and grasslands (Dugger and Dugger 2020).

There are no documented CNDDB occurrences of long-billed curlew within 5 miles of the Study Area (CDFW 2023a). The disturbed grassland and agricultural land onsite and in the vicinity of the Study Area provides marginally suitable winter foraging habitat for this species. Therefore, long-billed curlews have low potential to occur within the Study Area.

4.6.6.4 White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not listed pursuant to either the California or federal ESAs; however, the species is fully protected pursuant to Section 3511 of the California Fish and Game Code. This species is a common resident in the Central Valley and the entire length of the California coast, and all areas up to the Sierra Nevada foothills and southeastern deserts (Dunk 2020). In northern California, white-tailed kite nesting occurs from March through early August, with nesting activity peaking from March through June. Nesting occurs in trees within riparian, oak woodland, savannah, and agricultural communities that are near foraging areas such as low elevation grasslands, agricultural, meadows, farmlands, savannahs, and emergent wetlands (Dunk 2020).

There are no documented CNDDB occurrences of white-tailed kite within 5 miles of the Study Area (CDFW 2023a). The trees onsite and in the vicinity of the Study Area provide suitable nesting habitat for this species. Therefore, white-tailed kites have potential to occur within the Study Area.

4.6.6.5 Golden Eagle

The golden eagle (*Aquila chrysaetos*) is not listed pursuant to either the California or federal ESAs. However, it is fully protected according to Section 3511 of the California Fish and Game Code and the federal Bald and Golden Eagle Protection Act and is a CDFW Watch List species. Golden eagles generally nest on cliff ledges and/or large lone trees in rolling to mountainous terrain. Golden eagles nest throughout California except the flat portions of the Central Valley, the immediate coast, and portions of southeastern California (Katzner et al. 2020). Occurrences within the Central Valley are usually dispersing post-breeding birds, nonbreeding subadults, or migrants. Foraging habitat includes open grassland and savannah. Nesting occurs from February through August.

There are no documented CNDDB occurrences of golden eagle within 5 miles of the Study Area (CDFW 2023a). The disturbed grassland and agricultural land onsite and in the vicinity of the Study Area provides marginally suitable foraging habitat for this species. Therefore, golden eagles have low potential to occur within the Study Area.

4.6.6.6 Northern Harrier

The northern harrier (*Circus hudsonius*) is not listed pursuant to either the California or federal ESAs; however, it is considered to be a USFWS BCC and a CDFW SSC. This species is known to nest in the Central Valley, along the Pacific Coast, and in northeastern California. The northern harrier is a ground-nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah communities usually in areas with dense vegetation (Smith et al. 2020). Foraging occurs within a variety of open environments such as marshes, agricultural fields, and grasslands. Nesting occurs from April through September.

There are no documented CNDDB occurrences of northern harrier within 5 miles of the Study Area (CDFW 2023a). The disturbed grassland and agricultural land onsite and in the vicinity of the Study Area provides marginally suitable nesting habitat for this species. Therefore, northern harrier have low potential to occur within the Study Area.

4.6.6.7 Cooper's Hawk

The Cooper's hawk (*Accipiter cooperii*) is not listed pursuant to either the California or federal ESAs. However, it is a CDFW Watch List species. Typical nesting and foraging habitats include riparian woodland, dense oak woodland, and other woodlands near water. Cooper's hawks nest throughout California from Siskiyou County to San Diego County and includes the Central Valley (Rosenfield et al. 2020). Breeding occurs from March through July, with a peak from May through July.

There are no documented CNDDB occurrences of Cooper's hawk within 5 miles of the Study Area (CDFW 2023a). The trees onsite and in the vicinity of the Study Area provide suitable nesting habitat for this species. Therefore, Cooper's hawks have potential to occur within the Study Area.

4.6.6.8 Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species and is protected pursuant to the California Endangered Species Act. This species nests in North America (Canada, western U.S., and Mexico) and typically winters from South America north to Mexico. However, a small population has been observed wintering in the Sacramento-San Joaquin River Delta (Bechard et al. 2020). In California, the nesting season for Swainson's hawk ranges from mid-March to late August.

Swainson's hawks nest in tall trees in a variety of wooded communities including riparian, oak woodland, roadside landscape corridors, urban areas, and agricultural areas, among others. Foraging habitat includes open grassland, savannah, low-cover row crop fields, and livestock pastures. In the Central Valley, Swainson's hawks typically feed on a combination of California vole (*Microtus californicus*), California ground squirrel (*Otospermophilus beecheyi*), ring-necked pheasant (*Phasianus colchicus*), many passerine birds, and grasshoppers (*Melanoplus* species). Swainson's hawks are opportunistic foragers and will readily forage in association with agricultural mowing, harvesting, discing, and irrigating (Estep 1989). The removal of vegetative cover by such farming activities results in more readily available prey items for this species.

There are eight documented CNDDB occurrences of Swainson's hawk within 5 miles of the Study Area (CDFW 2023a). The trees onsite and in the vicinity of the Study Area provide suitable nesting habitat and the disturbed grassland and agricultural lands onsite represent suitable foraging habitat for this species. Therefore, Swainson's hawks have potential to occur within the Study Area.

4.6.6.9 Ferruginous Hawk

Ferruginous hawks (*Buteo regalis*) are not listed pursuant to either the California or federal ESAs. However, they are a CDFW Watch List species and USFWS BCC. This species typically occurs in open environments and nests from Oregon to Canada, though nesting has been documented in Lassen County, California (Small 1994). For the remainder of the state, including the Central Valley, ferruginous hawk occurrences are restricted to the nonbreeding season (approximately September through March) (Small 1994). Wintering habitat includes a variety of open communities including annual grasslands, agricultural areas, deserts, and savannahs, where there is an abundance of ground squirrels, prairie dogs, lagomorphs, or pocket gophers (Ng et al. 2020).

There are no documented CNDDB occurrences of ferruginous hawks within 5 miles of the Study Area (CDFW 2023a). The disturbed grassland and agricultural land onsite and in the vicinity of the Study Area provides marginally suitable foraging habitat for this species. Therefore, ferruginous hawks have low potential to occur within the Study Area.

4.6.6.10 Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and an SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel but may also use manufactured structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (California Department of Fish and Game [CDFG] 2012). The breeding season typically occurs between February 1 and August 31 (CDFG 2012).

There is one documented CNDDB occurrence of burrowing owl within 5 miles of the Study Area (CDFW 2023a). The vast majority of the Study Area is unsuitable due to agricultural activities and regular disking. However, ruderal areas that cannot be disced or plowed could support marginal burrow habitat. Therefore, burrowing owls have low potential to occur within the Study Area.

4.6.6.11 Nuttall's Woodpecker

The Nuttall's woodpecker (*Dryobates nuttallii*) is not listed and protected under either state or federal ESAs, but is considered a USFWS BCC. They are resident from Siskiyou County south to Baja California. Nuttall's woodpeckers nest in tree cavities primarily within oak woodlands, but also can be found in riparian woodlands (Lowther et al. 2020). Breeding occurs during April through July.

There are no documented CNDDB occurrences of Nuttall's woodpecker within 5 miles of the Study Area (CDFW 2023a). However, the larger trees onsite provides potentially suitable nesting habitat for this species. Therefore, Nuttall's woodpecker has potential to occur within the Study Area.

4.6.6.12 Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is not listed pursuant to either the California or federal ESAs; but is considered an SSC by the CDFW. Loggerhead shrikes nest throughout California except the northwestern corner, montane forests, and high deserts (Small 1994). Loggerhead shrikes nest in small trees and shrubs in open country with short vegetation such as pastures, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 2020). The nesting season extends from March through July.

There are no documented CNDDB occurrences of loggerhead shrike within 5 miles of the Study Area (CDFW 2023a). However, the trees and shrubs onsite provides potentially suitable nesting habitat for this species. Therefore, loggerhead shrike has potential to occur within the Study Area.

4.6.6.13 Yellow-Billed Magpie

The yellow-billed magpie (*Pica nuttalli*) is not listed pursuant to either the California or federal ESAs but is considered a USFWS BCC. This endemic species is a yearlong resident of the Central Valley and Coast Ranges from San Francisco Bay to Santa Barbara County. Yellow-billed magpies build large, bulky nests in trees in a variety of open woodland habitats, typically near grassland, pastures or cropland. Nest building begins in late-January to mid-February, which may take up to 6 to 8 weeks to complete, with eggs laid during April to May, and fledging during May to June (Koenig and Reynolds 2020). The young leave the nest about 30 days after hatching (Koenig and Reynolds 2020). Yellow-billed magpies are highly susceptible to West Nile Virus, which may have been the cause of death to thousands of magpies during 2004 to 2006 (Koenig and Reynolds 2020).

There are no documented CNDDB occurrences of yellow-billed magpie within 5 miles of the Study Area (CDFW 2023a). However, the trees onsite provide potentially suitable nesting habitat for this species. Therefore, yellow-billed magpie has potential to occur within the Study Area.

4.6.6.14 Oak Titmouse

Oak titmouse (*Baeolophus inornatus*) are not listed and protected under either state or federal ESAs but are considered a USFWS BCC. Oak titmouse breeding range includes southwestern Oregon south through California’s Coast, Transverse and Peninsular ranges, western foothills of the Sierra Nevada, into Baja California; they are absent from the humid northwestern coastal region and the San Joaquin Valley (Cicero et al. 2020). They are found in dry oak or oak-pine woodlands but may also use scrub oaks or other brush near woodlands (Cicero et al. 2020). Nesting occurs during March through July.

There are no documented CNDDB occurrences of oak titmouse within 5 miles of the Study Area (CDFW 2023a). However, the trees onsite provide potentially suitable nesting habitat for this species. Therefore, oak titmouse has potential to occur within the Study Area.

4.6.6.15 Lawrence's Goldfinch

The Lawrence's goldfinch (*Spinus lawrencei*) is not listed pursuant to either the California or federal ESAs but is currently a BCC according to the USFWS. Lawrence's goldfinches breed west of the Sierra Nevada-Cascade axis from Tehama, Shasta, and Trinity counties south into the foothills surrounding the Central Valley to Kern County; and on the Coast Range from Contra Costa County to Santa Barbara County (Watt et al. 2020). Lawrence's goldfinches nest in arid woodlands usually with brushy areas, tall annual weeds, and a local water source (Watt et al. 2020). Nesting occurs during March through September.

There are no documented CNDDB occurrences of Lawrence's goldfinch within 5 miles of the Study Area (CDFW 2023a). However, the weedy field edges disturbed grassland in the Study Area supports marginally suitable breeding habitat. Lawrence's goldfinch has low potential to occur in the Study Area.

4.6.6.16 "Modesto" Song Sparrow

The song sparrow (*Melospiza melodia*) is considered one of the most polytypic songbirds in North America (Miller 1956 as cited in Arcese et al.2020). The subspecies *Melospiza melodia heermanni* includes as synonyms *M. m. mailliardi* (the "Modesto song sparrow") and *M. m. cooperi* (Arcese et al. 2020). The "Modesto song sparrow" is not listed and protected pursuant to either the California or federal ESAs but is considered a CDFW SSC. The subspecies *M. m. heermanni* can be found in central and southwestern California to northwestern Baja California (Arcese et al. 2020). Song sparrows in this group may have slight morphological differences but they are genetically indistinguishable from each other. The "Modesto song sparrow" occurs in the Central Valley from Colusa County south to Stanislaus County, and east of the Suisun Marshes (Grinnell and Miller 1944). Nesting habitat includes riparian thickets and freshwater marsh communities, with nesting occurring from April through June.

There are no documented CNDDB occurrences of "Modesto" song sparrow within 5 miles of the Study Area (CDFW 2023a). However, the riparian scrub communities in the Study Area supports suitable breeding habitat. "Modesto" song sparrow has potential to occur in the Study Area.

4.6.6.17 Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) was granted emergency listing for protection under the California ESA in December 2014 but the listing status was not renewed in June 2015. After an extensive status review, the California Fish and Game Commission listed tricolored blackbirds as a threatened species in 2018. In addition, it is currently considered a USFWS BCC and a CDFW SSC. This colonial nesting species is distributed widely throughout the Central Valley, Coast Range, and into Oregon, Washington, Nevada, and Baja California (Beedy et al. 2020). Tricolored blackbirds nest in colonies that can range from several pairs to several thousand pairs, depending on prey availability, the presence of predators, or level of human disturbance. Tricolored blackbirds nesting habitat includes emergent marsh, riparian woodland/scrub, blackberry thickets, densely vegetated agricultural and idle fields (e.g., wheat, triticale, safflower, fava bean fields, thistle, mustard, cane, and fiddleneck), usually with some nearby standing water or ground saturation (Beedy et al. 2020). They feed mainly on grasshoppers during the breeding season, but may also forage upon a variety of other insects, grains, and seeds in open grasslands, wetlands, feedlots, dairies, and agricultural fields (Beedy et al. 2020). The nesting season is generally from March through August.

There are six documented CNDDB occurrences of tricolored blackbird within 5 miles of the Study Area (CDFW 2023a). The Himalayan blackberry brambles (riparian scrub) along the northern boundary of the Study Area support suitable breeding habitat. Tricolored blackbird has potential to occur in the Study Area.

4.6.6.18 Bullock's Oriole

The Bullock's oriole (*Icterus bullockii*) is not listed pursuant to either the California or federal ESAs but is currently a species of BCC according to the USFWS. In California, Bullock's orioles are found throughout the state except the higher elevations of mountain ranges and the eastern deserts (Small 1994). They are found in riparian and oak woodlands where nests are built in deciduous trees, but may also use orchards, conifers, and eucalyptus trees (Flood et al. 2020). Nesting occurs from March through July.

There are no documented CNDDB occurrences of Bullock's oriole within 5 miles of the Study Area (CDFW 2023a). However, the trees onsite support potentially suitable nesting habitat for this species. Therefore, Bullock's oriole has low potential to occur within the Study Area.

4.6.6.19 Yellow Warbler

Yellow warbler (*Setophaga petechia*) is a CDFW SSC. Yellow warbler nest from Baja California northward to Alaska and winter from Southern California to South America (American Ornithologist's Union 1983). Breeding occurs throughout much of California up to 8,000 feet in elevation, except the Central Valley and southeastern deserts (Heath 2008). Breeding habitat includes riparian vegetation in close proximity to water along streams and wet meadows (Heath 2008). During migration, yellow warbler may occur in a wide variety of woodland habitats throughout California. The nesting season is from May through August.

There are no documented CNDDB occurrences of yellow warbler within 5 miles of the Study Area (CDFW 2023a). This species does not nest in the vicinity of the Study Area but can occur occasionally as a migrant. Therefore, yellow warbler has low potential to occur within the Study Area.

4.6.6.20 Other MBTA Protected Birds

In addition to the special-status birds previously mentioned, the Study Area supports suitable nesting habitat for a number of common birds, including several raptors, which are protected under the federal MBTA and other state regulations, such as American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferus*), house finch (*Haemorhous mexicanus*), and western meadowlark (*Sturnella neglecta*), among many others.

4.6.7 Mammals

The Study Area supports potentially suitable roosting habitat (i.e., trees) for two special-status bats, the pallid bat (*Antrozous pallidus*) and western red bat.

4.6.7.1 Pallid Bat

The pallid bat is not listed pursuant to either the federal or California ESAs; however, this species is considered an SSC by CDFW. The pallid bat is a large, light-colored bat with long, prominent ears and pink, brown, or grey wing and tail membranes. This species ranges throughout North America from the interior of British Columbia south to Mexico, and east to Texas. The pallid bat inhabits low elevation (below 6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forest (above 7,000 feet). This species roosts alone or in groups in the crevices of rocky outcrops and cliffs, caves, mines, trees, and in various human structures such as bridges, and barns. Pallid bats are feeding generalists that glean a variety of arthropod prey from surfaces as well as capturing insects on the wing. Foraging occurs over grasslands, oak savannahs, ponderosa pine forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards. Although this species utilizes echolocation to locate prey, they often use only passive acoustic cues. This species is not thought to migrate long distances between summer and winter sites (WBWG 2023).

There is one documented CNDDB occurrence of pallid bat within 5 miles of the Study Area (CDFW 2023a). The trees onsite provide suitable roosting habitat for this species. Therefore, pallid bat has potential to occur within the Study Area.

4.6.7.2 Western Red Bat

The western red bat (*Lasiurus frantzii*) is not listed pursuant to either the California or federal ESAs; however, this species is considered an SSC by CDFW. The western red bat is easily distinguished from other western bat species by its distinctive red coloration. This species is broadly distributed, its range extending from southern British Columbia in Canada through Argentina and Chile in South America, and including much of the western United States. This solitary species day roosts primarily in the foliage of trees or shrubs in edge habitats bordering streams or open fields, in orchards, and occasionally urban areas. They may be associated with intact riparian habitat, especially with willows, cottonwoods, and sycamores. This species may occasionally utilize caves for roosting as well. They feed on a variety of insects, and generally begin to forage 1 to 2 hours after sunset. This species is considered highly migratory; however, the timing of migration and the summer ranges of males and females may be different. Winter behavior of this species is poorly understood (WBWG 2023).

There are no documented CNDDB occurrences of western red bat within 5 miles of the Study Area (CDFW 2023a). The trees and shrubs in the Study Area provide suitable roosting habitat for this species. Therefore, western red bat has potential to occur within the Study Area.

4.7 Critical Habitat or Essential Fish Habitat

The Bear River at the southern boundary of the Study Area is designated critical habitat for the California Central Valley DPS of steelhead (NOAA 2005) and EFH for Chinook salmon (NOAA 2021).

4.8 Wildlife Movement Corridors and Nursery Sites

The Bear River corridor along the southern boundary of the Study Area has the potential to serve as a wildlife movement corridor for aquatic and terrestrial wildlife species. The vast majority of the Study Area is regularly disturbed by disking or farming and supports minimal wildlife use, but does offer raptor foraging habitat. California ground squirrels and their burrows are located along field borders and fence lines that are not regularly farmed, tilled or disked.

The Study Area, including the Bear River, is not mapped as an Essential Habitat Connectivity area (CDFW 2023b). No nursery sites (e.g., rookeries, fawning grounds) have been previously documented to occur onsite according to the CNDDB and none were observed during the reconnaissance site visit.

4.9 Protected Trees/Oak Woodlands

There are a number of valley oaks scattered throughout the Study Area, including a relatively small grove of mature trees located in the southern portion of the site.

5.0 IMPACT ASSESSMENT AND RECOMMENDATIONS

This section specifically addresses questions raised by the Biological Resources section of the Environmental Checklist Form in Appendix G of the CEQA Guidelines.

5.1 CEQA Checklist Criteria IV(a) – Special-Status Species

Would the Project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

One special status species, evidence of VELB, has been documented within the Study Area. No other special-status species are known to occur within the Study Area; however, surveys have not been conducted and the Study Area supports potential or marginal habitat for seven fish (i.e., riffle sculpin, Pacific lamprey, Sacramento hitch, hardhead, Central Valley DPS steelhead, Central Valley fall/late fall-run ESU Chinook salmon, and Sacramento splittail), one amphibian (i.e., CRLF), two reptiles (i.e., northwestern pond turtle and giant gartersnake), 19 birds (i.e., greater sandhill crane, mountain plover, long-billed curlew, white-tailed kite, golden eagle, northern harrier, Cooper's hawk, Swainson's hawk, ferruginous hawk, burrowing owl, Nuttall's woodpecker, loggerhead shrike, yellow-billed magpie, oak titmouse, Lawrence's goldfinch, "Modesto" song sparrow, tricolored blackbird, Bullock's oriole, and yellow warbler), and two mammals (i.e., pallid bat and western red bat).

Project development may permanently remove or alter a minimal amount of mostly marginal nesting and foraging habitat for special-status birds and roosting habitat for special-status bats, and they could be directly or indirectly impacted by the Project in the low chance they are onsite during construction.

Implementation of recommended measures would avoid or minimize potential impacts to special-status species from the Project. These measures would also avoid or minimize impacts to MBTA-protected birds and nests.

5.1.1 Special-Status Plants

There are no potentially occurring special-status plants for the Study Area due to current and historic disturbances onsite. No avoidance and minimization measures are recommended pertaining to special-status plants.

5.1.2 Valley Elderberry Longhorn Beetle

Approximately 24 elderberry shrubs were documented within the survey area during a protocol-level VELB surveys. Twenty-three of the 24 shrubs recorded occur outside of the Project boundary or within avoided or preserved portions of the Project Area. The remaining shrub is located within the proposed development footprint of the Project boundary and is located along the existing Malone Road (Figure 7). This shrubs is a small, non-riparian shrub, with no evidence of exit holes, and occurs approximately 2,200 feet from the next nearest elderberry shrub.

VELB primarily occur in healthy riparian systems with dense clumps of elderberry shrubs at elevations less than 500 feet in the Central Valley of California. Due to spatial distribution of elderberry shrubs within riparian areas and habitat fragmentation, VELB occur in scattered metapopulations within riparian areas. VELB have limited dispersal capabilities, and habitat fragmentation decreases likelihood of colonization of unoccupied shrubs with as distance between shrubs increase from 200 to 800 feet from the nearest occupied shrub (Collinge et al. 2001, USFWS 2017).

As a result, Project development is not anticipated to result in direct impacts to the federally listed VELB. The following measures are recommended to avoid indirect impacts to VELB:

- Where feasible, establish and clearly demarcate avoidance zones for elderberry shrubs prior to construction. Avoidance zones shall include the drip line of the elderberry shrub plus a 20-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. The area to be avoided shall be fenced and/or flagged as close to construction limits as possible. No ground- or vegetation-disturbing activities will occur within avoidance zones. A qualified biologist/biological monitor shall be present if work must occur within the avoidance buffer to ensure elderberry shrubs are not impacted by the work.
- The single elderberry shrub that lacks evidence of VELB presence within the impact footprint along Malone Road will be transplanted to the Bear River riparian area. Transplanting activities will remain within the Project footprint and avoid existing shrubs by a minimum of 20 feet. The transplanting shall follow the VELB Guidance (USFWS 2017) and the most current version of the ANSI A300 (Part 6) guidelines for transplanting (http://www.tcia.org). A qualified biologist/biological monitor shall be present for the duration of transplanting activities to ensure VELB and existing elderberry shrubs are not impacted by the work.

- Dust generation should be minimized by applying water during construction activities or by presoaking work areas for all work within 30 feet of the elderberry.

Informal consultation with the USFWS was held on November 15, 2023. All details regarding elderberry and VELB presence in the area were reviewed and considered according to the 2017 VELB Framework (USFWS 2017), and no additional guidance was provided with respect to avoidance of impacts to VELB as part of the proposed Project. No further measures pertaining to VELB are required at this time.

5.1.3 Steelhead Central Valley DPS and other Special-Status Fish

There are no Proposed Project construction activities on the river side of the Bear River levee. As such no impacts to special-status fish are anticipated. No avoidance and minimization measures pertaining to special-status fish are recommended at this time.

5.1.4 California Red-Legged Frog

The Study Area supports marginally suitable habitat for CRLF and it is not expected to occur onsite. No avoidance and minimization measures pertaining to CRLFs are recommended at this time.

5.1.5 Northwestern Pond Turtle

The Bear River represents suitable aquatic habitat and the adjacent uplands represent potentially suitable nesting habitat for northwestern pond turtle. Project construction could result in impacts to individual northwestern pond turtle and nests. To avoid or minimize potential impacts to northwestern pond turtle, the following measures are recommended:

- A qualified biologist shall conduct a focused survey for northwestern pond turtle nests within all suitable habitat in the Project work area 10 days prior to the start of ground- or vegetation-disturbing activities. Any discovered nests will remain undisturbed until eggs have hatched.
- A qualified biologist shall conduct a preconstruction survey for northwestern pond turtle within all suitable habitat in the Project work area 48 hours prior to the start of ground- or vegetation-disturbing activities. Any individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

5.1.6 Giant Gartersnake

The Bear River represents marginally suitable habitat for giant gartersnake. There are no Proposed Project construction activities on the river side of the Bear River levee. As such no impacts to giant gartersnake are anticipated. No avoidance and minimization measures pertaining to giant gartersnake are recommended at this time.

5.1.7 Special-Status Birds

Special-status birds that could occur onsite include potential breeding species, species with low potential to occur onsite due to an absence of breeding habitat or does not nest in the region, or species that may only be found occasionally foraging or migrating through the area. Project construction and developments are not likely to directly impact those bird species that are not potentially breeding onsite, as they can easily escape to adjacent undeveloped lands for foraging and loafing. These species include greater sandhill crane, mountain plover, long-billed curlew, golden eagle, ferruginous hawk, and yellow warbler. No avoidance and minimization measures pertaining to potential impacts to these special-status birds are recommended at this time.

A number of other potentially occurring special-status birds could nest onsite including white-tailed kite, northern harrier, Cooper's hawk, Swainson's hawk, burrowing owl, Nuttall's woodpecker, loggerhead shrike, yellow-billed magpie, oak titmouse, Lawrence's goldfinch, "Modesto" song sparrow, tricolored blackbird, and Bullock's oriole. Project development and construction activities could result in the direct loss of individuals and occupied nests (eggs, nestlings) or cause nest abandonment. The following measures are recommended to avoid and minimize potential impacts to special-status birds:

5.1.7.1 Swainson's Hawk

The following measures are recommended to avoid and minimize potential impacts to Swainson's hawk foraging and nesting:

- If construction begins during March 1 to August 31, a qualified biologist shall conduct a preconstruction survey for Swainson's hawks nests onsite and a 0.25-mile buffer around the Project within 14 days prior to the start of ground- or vegetation-disturbing activities. Any active nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.
- Consult with CDFW to determine mitigation for loss of Swainson's hawk foraging habitat onsite, which consists of the disturbed grassland and agricultural areas onsite. Mitigation at a to-be-determined ratio can be achieved through purchase of CDFW-approved mitigation bank credits.

5.1.7.2 Burrowing Owl

The disturbed grassland and agricultural areas provide marginally suitable habitat for burrowing owls due to the periodic disturbances to the soil. However, ruderal areas such as field borders and fence lines that are infrequently disked or tilled support ground squirrels and burrows that could be used by burrowing owls. The following measures recommended to avoid and minimize potential impacts to burrowing owls;

- A qualified biologist shall conduct a *take avoidance* preconstruction survey according to the *Staff Report on Burrowing Owl Mitigation* (Staff Report) CDFW 2012). If no burrowing owls or evidence are detected, no further measures are necessary.

- If active/occupied burrows are detected during the breeding season (February 1-August 31), avoidance buffers should be established in coordination with CDFW, until the end of the breeding season.
- If active/occupied burrows are located in the Project footprint and destruction is unavoidable, develop a Burrowing Owl Exclusion Plan for review and approval by CDFW. The exclusion plan could include passive relocation according to guidelines in the Staff Report.
- Upon CDFW approval, implement measures outlined in the exclusion plan.

5.1.7.3 Other Special-Status and Common Raptors

The following measures are recommended to avoid and minimize potential impacts to nesting white-tailed kite, northern harrier, and Cooper's hawk:

- If construction begins during February 1 to September 30, a qualified biologist shall conduct a preconstruction survey for raptor nests onsite and a 500-foot buffer around the Project within 14 days prior to the start of ground- or vegetation-disturbing activities. Any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.

5.1.7.4 Tricolored Blackbird

The following measures are recommended to avoid and minimize potential impacts to tricolored blackbird nesting:

- Within 30 days prior to construction, a qualified biologist shall conduct a preconstruction survey for nesting tricolored blackbird onsite and a 500-foot buffer around the Project. If any active nesting colonies are observed, the nesting colony shall be designated a sensitive area and protected by an avoidance buffer of 500 feet, or as otherwise determined in coordination with CDFW. The avoidance buffer shall be maintained until a qualified biologist has determined that the young have fledged and the colony is no longer active. Monitoring of active nesting colony shall be conducted by a qualified biologist during construction activities, and avoidance buffers may be adjusted if any agitated behavior by the nesting birds is observed.

5.1.7.5 Other Special-Status and Common Birds (Non-raptors)

The following measures are recommended to avoid and minimize potential impacts to nesting Nuttall's woodpecker, loggerhead shrike, yellow-billed magpie, oak titmouse, Lawrence's goldfinch, "Modesto" song sparrow, Bullock's oriole, and other birds protected under the MBTA:

- If construction begins during February 1 to September 30, a qualified biologist shall conduct a preconstruction nesting bird survey onsite and a 100-foot buffer around the Project within 14 days prior to the start of ground- or vegetation-disturbing activities. If any active nests are observed, these nests shall be designated a sensitive area and protected by an avoidance buffer established in coordination with CDFW until a qualified biologist has determined that the young have fledged or the nest is otherwise no longer occupied.

5.1.8 Pallid Bat and Day Roosting Bats

The Study Area supports potential roosting habitat for pallid bat and other species of day-roosting bats within the mature trees of the Study Area. Project construction could result in direct loss of roosting individuals. If potential roosting habitat is planned for removal, the following measures are recommended to avoid and minimize potential impacts to roosting bats:

- A qualified biologist shall conduct a bat habitat assessment for suitable bat roosting habitat prior to any construction activities that may impact bat habitat (e.g., mature trees). If no suitable roosting habitat is identified, no further measures are necessary. If suitable roosting habitat and/or signs of bat use is identified during the assessment, the roosting habitat shall be avoided to the extent possible, and the following shall be implemented:
  - If suitable roosting habitat and/or signs of bat use is identified in a tree or other habitat structure that must be removed, a qualified biologist shall conduct a night emergence survey within 14 days prior to habitat removal to determine if bats are roosting in potential habitat features. Visual emergence surveys will be conducted 45 minutes prior to sunset and continue for 2 hours. The qualified biologist will observe potential roosting features using ambient light conditions and/or night observation devices, when applicable, for exiting bats. Acoustic monitoring will be conducted to collect bat echolocation calls to facilitate the identification of observed bats to species.
  - Emergence surveys shall not be conducted during the bat inactive/hibernation period (typically October 15 through March 1, or when nighttime low temperatures are 45°F or lower and rain is not over ½ inch in 24 hours), as bats are not detectable using emergence survey methods during their inactive period.
  - If occupied roosting habitat is found and construction activities are proposed within 50 feet of the occupied roosting habitat, a qualified biologist shall prepare a Bat Management Plan for CDFW's review and approval prior to removing suitable bat trees. The Plan shall include specific methods and materials for passive exclusion of bats and/or two-step tree removal process, species-specific habitat replacement mitigation, and/or post-construction mitigation monitoring. If a maternity roost is located, that roost will remain undisturbed until after the maternity season or until a qualified biologist has determined the roost is no longer active. If bat roost mitigation is required, roost mitigation will be installed as far in advance of the bat maternity season as possible, but no less than 30 days prior to roost removal.

5.1.9 Western Red Bat

Western red bat has the potential to occur within shrub and tree foliage within the Study Area. In order to avoid potential impacts to western red bat, the following avoidance and minimization measures are recommended:

- If shrubs or trees are proposed to be removed or trimmed and determined by a qualified bat biologist to be suitable day-roosting habitat for western red bat, then a qualified bat biologist will prepare a Bat Management Plan that will include specific avoidance and minimization measures to reduce impacts to roosting western red bats. The Bat Management Plan will be submitted to CDFW for approval prior to the removal of trees and shrubs. The Project-specific Bat Management Plan shall include the requirement for preconstruction acoustic surveys for western red bats, a requirement or a preconstruction survey report including methods, results, and recommendations based on the acoustic survey submitted to CDFW, roost removal timing outside of the maternity and hibernation seasons and methodology; and will include as necessary and appropriate the inclusion of no-disturbance buffers, methods and materials for bat deterrents, and/or species-specific habitat replacement mitigation.

5.2 CEQA Checklist Criteria IV(b) – Sensitive Natural Communities

Would the Project:

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Riparian vegetation can be found at the Study Area northern and southern boundaries . No impacts are proposed for the riparian vegetation along the Bear River at the southern boundary. The riparian scrub habitat located at the northern boundary is blackberry scrub and is not classified as a Sensitive Natural Community (SNC) according to MCV. Valley oak woodland and forest is present within the southern portion of the Project Area and is classified as an SNC according to MCV. No impacts to Valley oak woodland and forest onsite are proposed as part of the Project. .

- A qualified biologist shall conduct vegetation surveys within the Project impact area and a 25-foot buffer to delineate SNCs. If SNCs are identified onsite, implement the following measures:
  - If avoidance of SNCs is feasible, establish and clearly demarcate avoidance zones for SNCs prior to construction. Avoidance zones shall include the extent of the SNC plus a 25-foot buffer, unless otherwise determined by a qualified biologist, and shall be maintained until the completion of construction. A qualified biologist/biological monitor shall be present if work must occur within the avoidance buffer to ensure SNCs are not impacted by the work.
  - If avoidance of SNCs is not feasible, mitigation for significant impacts to SNCs may be required. If needed, mitigation measures shall be developed in consultation with CDFW.

5.3 CEQA Checklist Criteria IV(c) – Aquatic Resources

Would the Project:

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

There are currently no proposed impacts to the Bear River along the southern boundary. There are no other aquatic resources or potential waters of the U.S./State present within the Study Area.

5.4 CEQA Checklist Criteria IV(d) – Movement Corridors and Nursery Sites

Would the Project:

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

There are currently no proposed impacts to the Bear River along the southern boundary. The vast majority of the Study Area has been periodically disturbed by disking and farming. There are no wildlife movement corridors or nursery sites present.

5.5 CEQA Checklist Criteria IV(e) – Conflicts with Local Policies or Ordinances

Would the Project:

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Project development could impact valley oak trees that are subject to regulation under the Oak Woodlands Conservation Law (Public Resources Code 21083.4). The following measure are recommended to avoid or minimize potential impacts to protected oak trees:

- A certified arborist shall prepare an arborist report documenting all trees with a DBH of 5 inches or greater within the Project.
- Mitigate significant impacts to oak trees according to the Oak Woodlands Conservation Law or other measures developed by the City of Wheatland.

5.6 CEQA Checklist Criteria IV(f) – Conflicts with Conservation Plans

Would the Project:

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The Project is not subject to the provisions of an adopted conservation plan.

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LIST OF APPENDICES

APPENDIX A

Results of Database Queries

CNPS Rare Plant Inventory

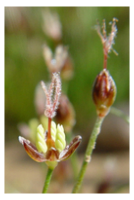
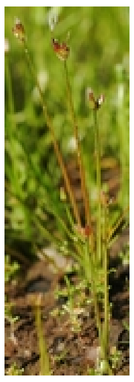
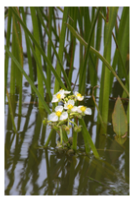
California Native Plant Society

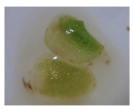
Search Results

20 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [**1A:1B:2A:2B:3:4**] , Quad is one of [**3812184:3912114:3912124:3912123:3912113:3812183:3812173:3812174:3812175:3812185:3912115:3912125**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1	Yes	1994-01-01	No Photo Available
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual/perennial herb	Aug	None	None	G5	S4	4.2		1994-01-01	No Photo Available
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	 ©1998 Dean Wm. Taylor
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	None	None	G5T3	S3	4.2	Yes	2019-01-07	 © 2011 Steven Perry
Brodiaea sierrae	Sierra foothills brodiaea	Themidaceae	perennial bulbiferous herb	May-Aug	None	None	G3	S3	4.3	Yes	2012-11-20	 © 2006 George W. Hartwell
Chloropyron molle ssp. hispidum	hispid salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	None	None	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	annual herb	(Mar)May-Jul	None	None	G4G5T4	S4	4.2	Yes	2001-01-01	No Photo Available
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	Yes	1988-01-01	No Photo Available
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2		1980-01-01	 © 2013 Aaron Arthur
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G3	S3	4.2	Yes	1980-01-01	 © 2016 Aaron Schusteff

Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2		1974-01-01	 ©2004 Carol W. Witham
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01	 © 2020 Steven Perry
Juncus leiospermus var. *ahartii*	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	None	None	G2T1	S1	1B.2	Yes	1984-01-01	 © 2004 Carol W. Witham
Juncus leiospermus var. *leiospermus*	Red Bluff dwarf rush	Juncaceae	annual herb	Mar-Jun	None	None	G2T2	S2	1B.1	Yes	1974-01-01	 ©2016 Dylan Neubauer
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	Yes	1974-01-01	 ©2000 John Game
Monardella venosa	veiny monardella	Lamiaceae	annual herb	May-Jul	None	None	G1	S1	1B.1	Yes	1984-01-01	 © 2007 George W. Hartwell
Navarretia myersii ssp. *myersii*	pincushion navarretia	Polemoniaceae	annual herb	Apr-May	None	None	G2T2	S2	1B.1	Yes	1994-01-01	 © 2020 Leigh Johnson
Pseudobahia bahiifolia	Hartweg's golden sunburst	Asteraceae	annual herb	Mar-Apr	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01	 ©2013 Debra L. Cook

Wolffia brasiliensis	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr-Dec	None	None	G5	S2	2B.3		2001-01-01	 © 2021 Scot Loring

Showing 1 to 20 of 20 entries

Suggested Citation:
California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 28 September 2023].

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Wheatland (3912114) OR Sheridan (3812184) OR Lincoln (3812183) OR Smartville (3912123) OR Browns Valley (3912124) OR Camp Far West (3912113) OR Yuba City (3912125) OR Olivehurst (3912115) OR Nicolaus (3812185) OR Verona (3812175) OR Pleasant Grove (3812174) OR Roseville (3812173))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAABF02020	***Spea hammondii*** western spadefoot	None	None	G2G3	S3S4	SSC
AAABH01053	***Rana boylii pop. 3*** foothill yellow-legged frog - north Sierra DPS	None	Threatened	G3T2	S2	
ABNGA04010	***Ardea herodias*** great blue heron	None	None	G5	S4	
ABNGA11010	***Nycticorax nycticorax*** black-crowned night heron	None	None	G5	S4	
ABNKC06010	***Elanus leucurus*** white-tailed kite	None	None	G5	S3S4	FP
ABNKC11011	***Circus hudsonius*** northern harrier	None	None	G5	S3	SSC
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S4	
ABNME03041	***Laterallus jamaicensis coturniculus*** California black rail	None	Threatened	G3T1	S2	FP
ABNRB02022	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	Threatened	Endangered	G5T2T3	S1	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S2	SSC
ABNSB13010	***Asio otus*** long-eared owl	None	None	G5	S3?	SSC
ABPAU01010	***Progne subis*** purple martin	None	None	G5	S3	SSC
ABPAU08010	***Riparia riparia*** bank swallow	None	Threatened	G5	S3	
ABPBW01114	***Vireo bellii pusillus*** least Bell's vireo	Endangered	Endangered	G5T2	S3	
ABPBX03010	***Setophaga petechia*** yellow warbler	None	None	G5	S3	SSC
ABPBX24010	***Icteria virens*** yellow-breasted chat	None	None	G5	S4	SSC
ABPBXA0020	***Ammodramus savannarum*** grasshopper sparrow	None	None	G5	S3	SSC
ABPBXA3013	***Melospiza melodia pop. 1*** song sparrow ("Modesto" population)	None	None	G5T3?Q	S3?	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G1G2	S2	SSC
AFCAA01031	***Acipenser medirostris pop. 1*** green sturgeon - southern DPS	Threatened	None	G2T1	S1	
AFCHA0205L	***Oncorhynchus tshawytscha pop. 11*** chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	G5T2Q	S2	
AFCHA0209K	***Oncorhynchus mykiss irideus pop. 11*** steelhead - Central Valley DPS	Threatened	None	G5T2Q	S2	
AFCJB34020	***Pogonichthys macrolepidotus*** Sacramento splittail	None	None	G3	S3	SSC
AMACC01020	***Myotis yumanensis*** Yuma myotis	None	None	G5	S4	
AMACC05032	***Lasiurus cinereus*** hoary bat	None	None	G3G4	S4	
AMACC05080	***Lasiurus frantzii*** western red bat	None	None	G4	S3	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G4	S3	SSC
AMAFJ01010	***Erethizon dorsatum*** North American porcupine	None	None	G5	S3	
ARAAD02030	***Emys marmorata*** western pond turtle	None	None	G3G4	S3	SSC
ARADB36150	***Thamnophis gigas*** giant gartersnake	Threatened	Threatened	G2	S2	
CTT44110CA	***Northern Hardpan Vernal Pool*** Northern Hardpan Vernal Pool	None	None	G3	S3.1	
CTT44132CA	***Northern Volcanic Mud Flow Vernal Pool*** Northern Volcanic Mud Flow Vernal Pool	None	None	G1	S1.1	
CTT45310CA	***Alkali Meadow*** Alkali Meadow	None	None	G3	S2.1	
CTT45320CA	***Alkali Seep*** Alkali Seep	None	None	G3	S2.1	
CTT61410CA	***Great Valley Cottonwood Riparian Forest*** Great Valley Cottonwood Riparian Forest	None	None	G2	S2.1	
CTT61420CA	***Great Valley Mixed Riparian Forest*** Great Valley Mixed Riparian Forest	None	None	G2	S2.2	
ICBRA03010	***Branchinecta conservatio*** Conservancy fairy shrimp	Endangered	None	G2	S2	
ICBRA03030	***Branchinecta lynchi*** vernal pool fairy shrimp	Threatened	None	G3	S3	
ICBRA06010	***Linderiella occidentalis*** California linderiella	None	None	G2G3	S2S3	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ICBRA10010	***Lepidurus packardi*** vernal pool tadpole shrimp	Endangered	None	G3	S3	
IICOL02106	***Cicindela hirticollis abrupta*** Sacramento Valley tiger beetle	None	None	G5TH	SH	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T3	S3	
IICOL49010	***Anthicus sacramento*** Sacramento anthicid beetle	None	None	G4	S4	
IICOL49020	***Anthicus antiochensis*** Antioch Dunes anthicid beetle	None	None	G3	S3	
IICOL5V010	***Hydrochara rickseckeri*** Ricksecker's water scavenger beetle	None	None	G2?	S2?	
IIHYM24260	***Bombus pensylvanicus*** American bumble bee	None	None	G3G4	S2	
IIHYM35210	***Andrena subapasta*** An andrenid bee	None	None	G1G2	S1S2	
PDAST11061	***Balsamorhiza macrolepis*** big-scale balsamroot	None	None	G2	S2	1B.2
PDAST7P010	***Pseudobahia bahiifolia*** Hartweg's golden sunburst	Endangered	Endangered	G1	S1	1B.1
PDCAM060C0	***Downingia pusilla*** dwarf downingia	None	None	GU	S2	2B.2
PDCAM0C010	***Legenere limosa*** legenere	None	None	G2	S2	1B.1
PDFAB0F8R3	***Astragalus tener var. ferrisiae*** Ferris' milk-vetch	None	None	G2T1	S1	1B.1
PDLAM18082	***Monardella venosa*** veiny monardella	None	None	G1	S1	1B.1
PDMAL0H0R3	***Hibiscus lasiocarpos var. occidentalis*** woolly rose-mallow	None	None	G5T3	S3	1B.2
PDONA05053	***Clarkia biloba ssp. brandegeeae*** Brandegee's clarkia	None	None	G4G5T4	S4	4.2
PDPLM0C0X1	***Navarretia myersii ssp. myersii*** pincushion navarretia	None	None	G2T2	S2	1B.1
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G2?	S2?	1B.2
PDSCR0J0D1	***Chloropyron molle ssp. hispidum*** hispid salty bird's-beak	None	None	G2T1	S1	1B.1
PDSCR0R060	***Gratiola heterosepala*** Boggs Lake hedge-hyssop	None	Endangered	G2	S2	1B.2
PMALI040Q0	***Sagittaria sanfordii*** Sanford's arrowhead	None	None	G3	S3	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PMJUN011L1	***Juncus leiospermus var. ahartii*** Ahart's dwarf rush	None	None	G2T1	S1	1B.2
PMJUN011L2	***Juncus leiospermus var. leiospermus*** Red Bluff dwarf rush	None	None	G2T2	S2	1B.1
PMLEM03020	***Wolffia brasiliensis*** Brazilian watermeal	None	None	G5	S2	2B.3

Record Count: 63

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Placer and Yuba counties, California

Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600
📠 (916) 414-6713

Federal Building

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2246		Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (🟩)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum

probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

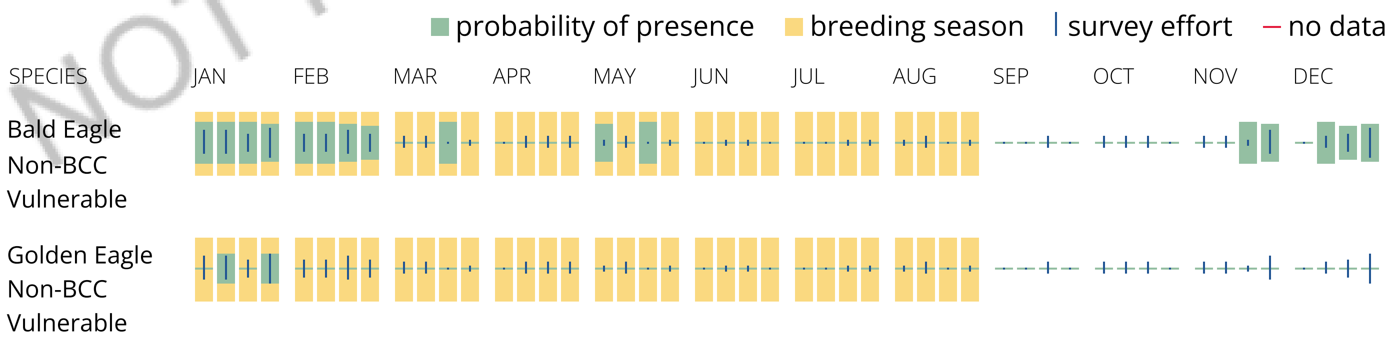
Breeding Season (🟨)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow Passerculus sandwichensis beldingi This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Bullock's Oriole Icterus bullockii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31

Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (🟩)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (🟨)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

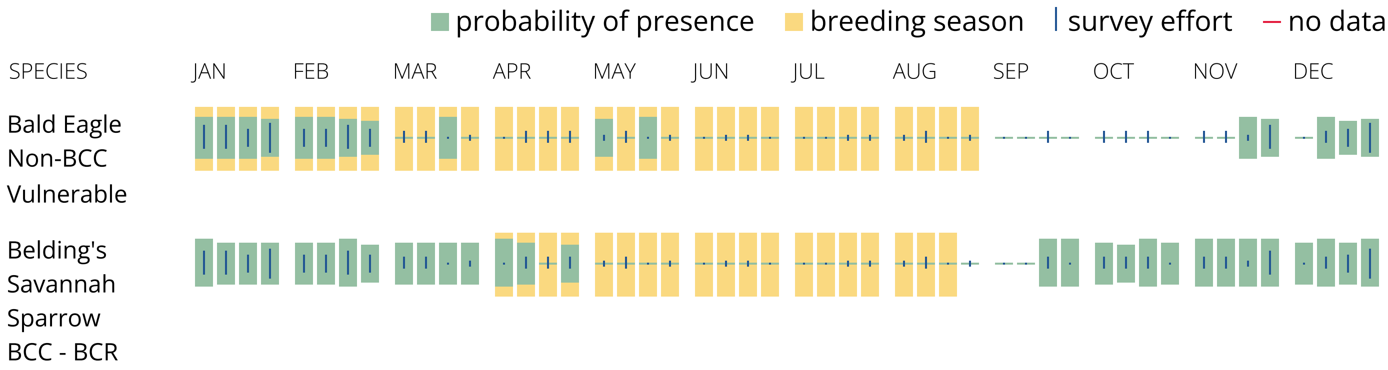
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
- PEM1A

RIVERINE
- R2UBH
- R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

National Marine Fisheries Service-West Coast Region-California
Endangered Species Act Species List (2016)
Quad Name: **Wheatland**
Quad Number: **39121-A4**

1.0 ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

2.0 ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat - **X**
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

3.0 ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

4.0 ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

5.0 ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

6.0 ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

7.0 ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

8.0 Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

9.0 MMPA Species (See list at left)

10.0 ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Sheridan**
Quad Number **38121-H4**

11.0 ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

12.0 ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat - **X**
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

13.0 ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

14.0 ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

15.0 ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

16.0 ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

17.0 ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

18.0 Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

19.0 MMPA Species (See list at left)

20.0 ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Accessed September 2023 (https://archive.fisheries.noaa.gov/wcr/maps_data/california_species_list_tools.html)

APPENDIX B

Representative Photographs

Photo 1: Disturbed Grassland with Valley Oaks

Photo 2: Previously Mass Graded Disturbed Grassland

Photo 3: Riparian Scrub Along Bear River

Photo 4: Bear River Levee

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Representative Site Photographs

2023-183/Heritage Oaks East Project

Photo 5: Bear River at SR-65

Photo 6: Excavated Detention Pond-Upland

Photo 7: Riparian Scrub Along Northern Boundary

Photo 8: Elderberry Shrub Near SR-65

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Representative Site Photographs

2023-183/Heritage Oaks East Project

APPENDIX C

Plant Species Observed

SCIENTIFIC NAME	**COMMON NAME**
ADOXACEAE	MUSKROOT FAMILY
Sambucus nigra ssp. *Caerulea*	Blue elderberry
APIACEAE	CARROT FAMILY
*Anthriscus caucalis**	Bur chervil
ASTERACEAE	SUNFLOWER FAMILY
Baccharis pilularis	Coyote bush
Bidens frondose	Sticktight
*Carduus pycnocephalus**	Italian thistle
*Centaurea solstitialis**	Yellow star-thistle
*Cichorium intybus**	Chicory
*Dittrichia graveolens**	Stinkwort
*Lactuca serriola**	Prickly lettuce
*Silybum marianum**	Milk thistle
Xanthium strumarium	Rough cockle-bur
BETULACEAE	BIRCH FAMILY
Alnus rhombifolia	White alder
BRASSICACEAE	MUSTARD FAMILY
Brassica sp.*	Mustard
CONVOLVULACEAE	MORNING-GLORY FAMILY
*Convolvulus arvensis**	Field bindweed
EUPHORBIACEAE	SPURGE FAMILY
Croton setiger	Turkey mullein
FABACEAE	LEGUME FAMILY
*Robinia pseudoacacia**	Black locust
*Sesbania punicea**	Rattlebox
*Vicia sativa**	Spring vetch
FAGACEAE	OAK FAMILY
Quercus lobata	Valley oak
JUNCACEAE	RUSH FAMILY
Juncus effusus	Soft rush
LAMIACEAE	MINT FAMILY
Trichostema lanceolatum	Vinegar weed
ONAGRACEAE	EVENING PRIMROSE FAMILY
Epilobium brachycarpum	Panicled willow-herb
POACEAE	GRASS FAMILY
*Arundo donax**	Giant reed
Avena sp.*	Wild oat
*Bromus hordeaceus**	Soft brome
*Cynodon dactlyon**	Bermuda grass
*Elymus caput-medusae**	Medusahead grass
*Festuca myuros**	Rat-tail fescue
*Festuca perennis**	Italian ryegrass
*Paspalum dilatatum**	Dallis grass

SCIENTIFIC NAME	COMMON NAME
POLYGONACEAE	BUCKWHEAT FAMILY
Rumex sp.*	Dock
ROSACEAE	ROSE FAMILY
*Prunus dulcis**	Almond (cultivated)
RUBIACEAE	MADDER FAMILY
Cephalanthus occidentalis	Common buttonbush
SALICACEAE	WILLOW FAMILY
Populus fremontii	Fremont's cottonwood
Salix exigua	Sandbar willow
SAPINDACEAE	SOAPBERRY FAMILY
Acer negundo	Box-elder
SCROPHULARIACEAE	FIGWORT FAMILY
*Verbascum blattaria**	Moth mullein
VERBENACEAE	VERVAIN FAMILY
Phyla nodiflora	Common lippia

An asterisk (*) indicates a nonnative species.

APPENDIX D

Wildlife Species Observed

Common Name	**Scientific Name**
Reptiles	
Northern Pacific rattlesnake	*Crotalus oreganus*
Western fence lizard	*Sceloporus occidentalis*
Birds	
Mourning Dove	*Zenaida macroura*
Anna's Hummingbird	*Calypte anna*
Red-tailed Hawk	*Buteo jamaicensis*
Northern Flicker	*Colaptes auratus*
American Kestrel	*Falco sparverius*
Black Phoebe	*Sayornis nigricans*
California Scrub-Jay	*Aphelocoma californica*
Bushtit	*Psaltriparus minimus*
Ruby-crowned Kinglet	*Corthylio calendula*
Cedar Waxwing	*Bombycilla cedrorum*
White-breasted Nuthatch	*Sitta carolinensis*
Bewick's Wren	*Thryomanes bewickii*
European Starling*	*Sturnus vulgaris*
Western Bluebird	*Sialia mexicana*
American Robin	*Turdus migratorius*
House Finch	*Haemorhous mexicanus*
Lesser Goldfinch	*Spinus psaltria*
White-crowned Sparrow	*Zonotrichia leucophrys*
Lincoln's Sparrow	*Melospiza lincolnii*
California Towhee	*Melozone crissalis*
Brewer's Blackbird	*Euphagus cyanocephalus*
Orange-crowned Warbler	*Leiothlypis celata*
Yellow-rumped Warbler	*Setophaga coronata*
Mammals	
Mule deer	*Odocoileus hemionus*

*Nonnative Species