Heritage Oaks Estates East Project

SCH# 2024031192

Final Environmental Impact Report

Prepared for

City of Wheatland

November 2024

Prepared by

RANEY PLANNING & MANAGEMENT, INC.
25 years
1501 Sports Drive, Suite A, Sacramento, CA 95834

Heritage Oaks Estates East Project
Final Environmental Impact Report

SCH# 2024031192

Lead Agency

City of Wheatland
Community Development Department
Planning Division
111 C Street
Wheatland, CA 95692

Kevin Valente
Senior Planner

Prepared By

Raney Planning and Management, Inc.
1501 Sports Drive, Suite A
Sacramento, CA 95834
(916) 372-6100

Contact:
Angela DaRosa
Division Manager/Air Quality Specialist

Table of Contents

TABLE OF CONTENTS

1. Introduction and List of Commenters

1. INTRODUCTION AND LIST OF COMMENTERS

1.1 INTRODUCTION

This Final Environmental Impact Report (EIR) contains agency and public comments received during the public review period of the Heritage Oaks Estates East Project (proposed project) Draft EIR. This document has been prepared by the City of Wheatland, as Lead Agency, in accordance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines, Section 15132. The Introduction and List of Commenters chapter of the Final EIR discusses the background of the Draft EIR and purpose of the Final EIR, identifies the comment letters received on the Draft EIR, and provides an overview of the Final EIR's organization.

1.2 BACKGROUND

The Draft EIR identifies the proposed project's potential environmental impacts and the mitigation measures that would be required to be implemented. The following environmental analysis chapters are contained in the Draft EIR:

- Air Quality and Greenhouse Gas Emissions;
- Noise;
- Transportation;
- Tribal Cultural Resources;
- Utilities and Service Systems;
- Other Effects;
- Statutorily Required Sections; and
- Alternatives Analysis.

In accordance with CEQA, the Draft EIR was sent to the State Clearinghouse (SCH#: 2024031192) for distribution to State agencies on July 3, 2024 for a 45-day public review period. In addition, the Draft EIR and a Notice of Availability (NOA) for the Draft EIR were published on the City of Wheatland website. Printed copies of the Draft EIR were made available for review at the Wheatland Community Development Department (111 C Street, Wheatland, CA).

1.3 PURPOSE OF THE FINAL EIR

Under CEQA Guidelines Section 15132, the Final EIR shall consist of:

1. The Draft EIR or a revision of the Draft.
2. Comments and recommendations received on the Draft EIR.
3. A list of persons, organizations, and public agencies commenting on the Draft EIR.
4. The responses to significant environmental points raised in the review process.
5. Any other information added by the Lead Agency.

As required by CEQA Guidelines, Section 15090(a)(1)-(3), a Lead Agency must make the following three determinations in certifying a Final EIR:

1. The Final EIR has been completed in compliance with CEQA.
2. The Final EIR was presented to the decision-making body of the Lead Agency, and the decision-making body reviewed and considered the information in the Final EIR prior to approving the project.
3. The Final EIR reflects the Lead Agency's independent judgment and analysis.

Under CEQA Guidelines Section 15091, a public agency shall not approve or carry out a project for which an EIR has been certified that identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings (Findings of Fact) for each of those significant effects. Findings of Fact must be accompanied by a brief explanation of the rationale for each finding supported by substantial evidence in the record. The Findings of Fact are included in a separate document that will be considered for adoption by the City's decision-makers.

Pursuant to CEQA Guidelines, Section 15093(b), when a Lead Agency approves a project that would result in significant and unavoidable impacts, the agency must state in writing the reasons supporting the action (Statement of Overriding Considerations). The Statement of Overriding Considerations shall be supported by substantial evidence, and are subject to adoption by the County's decision-makers along with the Findings of Fact. The Heritage Oaks Estates East Project would result in a significant and unavoidable impact related to conflicting with or obstructing implementation of the applicable air quality plan during project operation. (Impact 4.1-2); and resulting 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). Thus, a Statement of Overriding Considerations must be adopted if the project is approved.

1.4 LIST OF COMMENTERS

The City of Wheatland received three comment letters during the public comment period on the Draft EIR for the proposed project. The comment letters were authored by the following agencies.

Agencies

Letter 1 .....California Department of Transportation
Letter 2 .....Feather River Air Quality Management District (August 14, 2024)
Letter 3 .....Feather River Air Quality Management District (August 16, 2024)

1.5 LIST OF LATE COMMENTERS

In addition to the above comment letters, the City of Wheatland received the following comment letter after the close of the Draft EIR comment period.

Letter 4 .....California State Water Resources Control Board

1.6 ORGANIZATION OF THE FINAL EIR

The Final EIR is organized into the following chapters:

1. Introduction and List of Commenters

Chapter 1 provides an introduction and overview of the document, describing the background and organization of the Final EIR. Chapter 1 also provides a list of commenters who submitted letters in response to the Draft EIR.

2. Responses to Comments

Chapter 2 presents the comment letters received and responses to each comment, as well as the applicable revisions to the Draft EIR. Each comment letter received has been numbered at the top and bracketed to indicate how the letter has been divided into individual comments. Each comment is given a number with the letter number appearing first, followed by the comment number. For example, the first comment in Letter 1 would have the following format: 1-1. The response to each comment will reference the comment number.

3. Revisions to the Draft EIR Text

Chapter 3 summarizes minor changes made to the Draft EIR text since its release.

4. Mitigation Monitoring and Reporting Program

CEQA Guidelines, Section 15097, requires lead agencies to adopt a program for monitoring the mitigation measures required to avoid the significant environmental impacts of a project. The intent of the Mitigation Monitoring and Reporting Program (MMRP) is to ensure implementation of the mitigation measures identified within the EIR for the Heritage Oaks Estates East Project.

2. Responses to Comments

2. RESPONSES TO COMMENTS

2.1 INTRODUCTION

The Responses to Comments chapter contains responses to each of the comment letters submitted regarding the Heritage Oaks Estates East Project (proposed project) Draft EIR during the public review period.

2.2 RESPONSES TO COMMENTS

The following four letters were received by the City, with Letters 1 through 3 received during the public comment period for the Draft EIR, and Letter 4 received after the close of the Draft EIR comment period. Each bracketed comment letter is followed by numbered responses to each bracketed comment. The responses amplify or clarify information provided in the Draft EIR and/or refer the reader to the appropriate place in the document where the requested information can be found. Comments that are not directly related to environmental issues (e.g., opinions on the merits of the project that are unrelated to its environmental impacts) are either discussed or noted for the record, as appropriate.

As presented in Chapter 3 of this Final EIR, minor corrections, additions, and revisions have been made to the Draft EIR, as initiated by the Lead Agency (City of Wheatland). However, the changes represent minor clarifications/amplifications of the analysis contained in the Draft EIR and do not constitute significant new information that, in accordance with CEQA Guidelines, Section 15088.5, would trigger the need to recirculate portions or all of the Draft EIR. Thus, recirculation of the Draft EIR is not required.

Each letter has been considered by the City and addressed, according to CEQA Guidelines Section 15088, prior to certification of this Final EIR.

Letter 1

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

DISTRICT 3
703 B STREET | MARYSVILLE, CA 95901-5556
(530) 821-8401
www.dot.ca.gov

July 30, 2024

GTS# 03-YUB-2024-00265
SCH# 2024031192

Mr. Kevin Valente
Senior Planner
City of Wheatland Community Development Department
111 C Street
Wheatland, CA 95692

Heritage Oaks Estates East Project

Dear Mr. Valente,

1-1 Thank you for including the California Department of Transportation (Caltrans) in the review process for the project referenced above. We reviewed this local development for impacts to the State Highway System (SHS) in keeping with our mission, vision, and goals, some of which includes addressing equity, climate change, and safety, as outlined in our statewide plans such as the California Transportation Plan, Caltrans Strategic Plan, and Climate Action Plan for Transportation Infrastructure.

1-2 The project site consists of approximately 148.70 acres of undeveloped land and is located on the southbound side of State Route (SR) 65 in the City of Wheatland, California. The proposed project would generally include the development of the project site with up to 685 single-family residences divided into 10 villages, as well as various associated improvements, including, but not limited to, three community parks, a paseo connecting the northern and southern villages, a landscape corridor along SR 65, open space areas, an internal roadway system, and various landscaping and utility improvements. Based on the Draft Environmental Impact Report (DEIR) provided, Caltrans has the following requests and recommendations:

Highway Operations

1-3 Caltrans Traffic Operations Policy Directive 13-02 requires that an Intersection Control Evaluation (ICE) be performed on all major intersections to identify optimal intersection control solutions where access to and from State highways is being considered. The ICE process requires analysis and screening of each intersection control strategy to

Letter 1 Cont.

1-3 Cont. identify viable and practical access alternatives for further review. The proposed intersections, SR 65/Red Oak Drive and SR 65/DeValentine Parkway, must go through the ICE process.

1-4
- Installation of the traffic controls determined through the ICE process should be included in the conditions of approval. Traffic controls are to be in place before access is in operation.

1-5
- A full warrant analysis at SR 65/4th Street should be done to determine the need for a signal at this intersection.

1-6
- Please clarify whether there be access to the site from Malone Avenue. If so, please clarify whether it be vehicle access or pedestrian access.

Traffic Safety

1-7 This project will have significant impact on SHS after the development of the project. Please clarify the access points for this site. Realignment of SR 65 seems most efficient in reducing potential vehicle and modal conflicts resulting from speed differentials associated with travel delay. Additionally, Crosswalks are to be upgraded to the latest Caltrans Standards, Also, please consider upgrading Signposts and Signals.

Forecasting & Modeling

1-8 The proposed project would have less-than-significant impacts on VMT with the proposed measures to be implemented-properly as mentioned in the DEIR.

Right of Way

1-9 Proposed development will be abutting SR 65, As project moves forward, Caltrans right of way (ROW) should be clearly labeled, showing bearings and distances along with the centerline and highway width on project plans. Caltrans record maps have been provided, if additional mapping is needed applicant should contact d3rwmaprequest@dot.ca.gov for any ROW maps if needed.

Applicant or their representatives may also need to identify any possible vulnerable survey monuments in the development area that will need to be preserved and/or perpetuated, as required by PE Act 6731.2 and PLS Act 8771.

Hydraulics

1-10
- No net increase to 100-year storm event peak discharge may be realized within the State's highway ROW and/or Caltrans drainage facilities because of the project. Further, the developer must maintain, or improve existing drainage

Letter 1 Cont.

1-10 Cont. patterns and/or facilities affected by the proposed project to the satisfaction of the State and Caltrans. This may be accomplished through the implementation of stormwater management Best Management Practices (BMPs) (i.e., detention/retention ponds or basins, sub-surface galleries, on-site storage and/or infiltration ditches, etc.) as applicable. Once installed, the property owner must properly maintain these systems. The proponent/developer may be held liable for future damages due to impacts for which adequate mitigation was not undertaken or sustained.

- **1-11** Runoff from the proposed project that will enter the State's highway ROW and/or Caltrans drainage facilities must meet all Regional Water Quality Control Board water quality standards prior to entering the State's highway ROW or Caltrans drainage facilities. Appropriate stormwater quality BMPs (i.e., oil/water separators, clarifiers, infiltration systems, etc.) may be applied to ensure that runoff from the site meets these standards (i.e., is free of oils, greases, metals, sands, sediment, etc.). Once installed, the property owner must properly maintain these systems.
- **1-12** Any drainage work performed within the State's highway ROW must meet all Caltrans drainage design and construction standards and will require a Caltrans' Encroachment Permit.

Encroachment Permit

1-13 Any project or work, including access modification and drainage work, that takes place along or within the State's ROW requires an encroachment permit issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five sets of plans clearly indicating State ROW must be submitted to:

Hikmat Bsaibess
California Department of Transportation
District 3, Office of Permits
703 B Street
Marysville, CA 95901

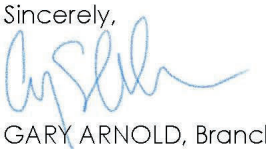
1-14 Please provide our office with copies of any further actions regarding this proposal. We would appreciate the opportunity to review and comment on any changes related to this development.

Letter 1 Cont.

1-14 Cont.

If you have any questions regarding these comments or require additional information, please contact Satwinder Dhatt, Local Development Review Coordinator, by phone (530) 821-8261 or via email at satwinder.dhatt@dot.ca.gov.

Sincerely,



GARY ARNOLD, Branch Chief
Local Development Review and Complete Streets
Division of Planning, Local Assistance, and Sustainability
California Department of Transportation, District 3

LETTER 1: CALIFORNIA DEPARTMENT OF TRANSPORTATION

Response to Comment 1-1
The comment is an introductory statement regarding the goals of the California Department of Transportation (Caltrans) and does not address the adequacy of the Draft EIR.

Response to Comment 1-2
The comment consists of a summary of the project description and setting. The comment does not address the adequacy of the Draft EIR.

Response to Comment 1-3
The comment provides background information regarding required regulatory evaluations. An Intersection Control Evaluation (ICE) on the proposed State Route (SR) 65/Red Oak Drive and SR65/DeValentine Parkway intersections will be required as a condition of project approval. The comment does not address the adequacy of the Draft EIR and has been noted for the record.

Response to Comment 1-4
The comment provides background information regarding traffic control requirements, and does not specifically address the adequacy of the Draft EIR. Applicable traffic control requirements will be required as a condition of project approval, as identified by the ICE process. The comment has been noted for the record and will be forwarded to the decisionmakers as part of their consideration of the proposed project.

Response to Comment 1-5
The comment does not address the adequacy of the Draft EIR and has been noted for the record. A traffic signal warrant analysis for the SR 65/4th Street intersection will be required as a condition of project approval.

Response to Comment 1-6
Vehicle and pedestrian access to the project site would be provided from Malone Avenue. The comment does not address the adequacy of the Draft EIR.

Response to Comment 1-7
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. As discussed under Impact 4.3-4 in Chapter 4.3, Transportation, of the Draft EIR, the proposed project would include acceleration and deceleration access lanes along SR 65 to reduce vehicle conflicts associated with speed differentials. All pedestrian improvements, including crosswalks, signposts, and signals, would be designed in accordance with the latest Caltrans standards. The comment does not address the adequacy of the Draft EIR and has been noted for the record.

Response to Comment 1-8
The comment does not address the adequacy of the Draft EIR and has been noted for the record.

Response to Comment 1-9

The comment provides background information regarding requirements of plan-sets prepared for the proposed project. The provided maps have been included as Appendix A of this Final EIR. The comment does not address the adequacy of the Draft EIR and has been noted for the record.

Response to Comment 1-10

As discussed under Impact 4.5-5 in Chapter 4.5, Utilities and Service Systems, of the Draft EIR, the proposed trunk line conveyance system and detention basins would be sized to handle peak flows from the 100-year, 10-day storm event. The rate of post-development flows from the project site would be less than the rate of existing flows, and the proposed project would not create or contribute to an increase to a 100-year storm event peak discharge within the SR 65 right-of-way (ROW) and/or Caltrans drainage facilities. However, because 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, the Draft EIR concluded that a significant impact could occur, and the proposed project would be subject to Mitigation Measure 4.5-5. Implementation of Mitigation Measure 4.5-5 would require the project applicant to prepare and submit a final drainage plan to the City Engineer for review and approval, and would reduce the potential impact to a less-than-significant level.

In addition, the proposed project would be subject to Mitigation Measures 4.6-24 and 4.6-25, requiring preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), and a detailed best management practice (BMP) and water quality maintenance plan. The comment does not address the adequacy of the Draft EIR and has been noted for the record.

Response to Comment 1-11

See Response to Comment 1-10.

Response to Comment 1-12

The comment provides background information regarding required permits and design standards. The comment does not address the adequacy of the Draft EIR and has been noted for the record. The proposed project would be required to obtain all necessary permits, including an encroachment permit. For a discussion of the proposed drainage system, see pages 4.5-28 through 4.5-30 in Chapter 4.5, Utilities and Service Systems, of the Draft EIR.

Response to Comment 1-13

The comment provides background information regarding required permits. The comment does not address the adequacy of the Draft EIR and has been noted for the record.

Response to Comment 1-14

The comment consists of a conclusion statement and does not address the adequacy of the Draft EIR.

Letter 2

Subject: FW: Heritage Oaks Estates East DEIR Project Questions

From: Peter Angelonides <PAngelonides@fraqmd.org>
Date: August 14, 2024 at 12:43:32 AM GMT+2
To: Kevin Valente <kvalente@raneymanagement.com>
Subject: Heritage Oaks Estates East DEIR Project Questions

Good afternoon,

I have reviewed the DEIR for the Heritage Oaks Estates East Project, and I have a few questions.

2-1
- Under User changes from defaults to Construction: Dust from Material Movement: it states in the justification for the change as no soil movement. Could you please confirm that is correct? In a project this size, it seems unlikely that no grading or soil movement will occur. If this is correct, the DEIR should include enforceable mitigation measures to ensure compliance.

2-2
- Also, in the construction phasing of the project it appears that hauling emissions for building construction are listed as 0.00 for Criteria Pollutants and there are no "trips" for hauling. Will there be no HHDT moving building materials or equipment to and from the project site during the 8 years of construction? What type of vehicles will be used to transport the building materials to the site? How will this be enforced?

2-3
- The District recommends that any mitigation applied in the air quality analysis be included as a mitigation measure to ensure it is enforceable. The air quality analysis appears to ban wood burning fireplaces and stoves. Please explain why a prohibition on wood burning fireplaces and stoves has not been included as a mitigation measure.

Sincerely,

Peter Angelonides
Air Quality Planner II
Feather River Air Quality Management District
541 Washington Ave.
Yuba City, CA 95991
Office:(530) 634-7659 Ext. 209
Telework:(530) 324-6964
pangelonides@fraqmd.org

LETTER 2: FEATHER RIVER AIR QUALITY MANAGEMENT DISTRICT

Response to Comment 2-1

The referenced change to defaults in CalEEMod is related to the import and export of soil to and from off-site locations. The project site was previously mass graded in 2006, and the project applicant has indicated that the proposed project would not require any additional soil hauling. The modeling includes a grading phase to account for the additional on-site grading activities that would occur as a result of the proposed project, and the off-road construction equipment that would be used to complete all on-site grading activities. For a discussion of construction-related air quality impacts, see pages 4.1-37 through 39 in Chapter 4.1, Air Quality and Greenhouse Gas Emissions, of the Draft EIR. Please also see Response to Comment 3-2.

Response to Comment 2-2

The CalEEMod default assumption is to include zero hauling trips for the building construction phase. However, CalEEMod includes a default number of worker trips and vendor trips associated with building construction. Based on the CalEEMod vehicle class mix, 75 percent of the worker vehicles are assumed to be light duty trucks (LDT). In addition, vendor trips are assumed to be generated by medium-heavy duty trucks (MHDT) and heavy-heavy duty trucks (HHDT). Transport of the building materials and equipment (such as cement trucks and water trucks) associated with the building construction phase is assumed to be fulfilled by the various workers and vendors that would be travelling to and from the site during the building construction phase. Thus, the CalEEMod default assumptions are adequate, and revisions to the air quality modeling are not required.

Response to Comment 2-3

The project applicant has indicated that wood burning fireplaces and stoves would not be included in the project as part of project design. Because the project would inherently be designed to not include wood burning fireplaces or stoves, the project was modeled as such. As such, the prohibition of wood burning fireplaces and stoves will be required as a condition of project approval. Thus, the assumptions included in the project-specific CalEEMod modeling are adequate, and revisions to the air quality modeling are not required. For a discussion of operational air quality impacts, see pages 4.1-39 through 41 in Chapter 4.1, Air Quality and Greenhouse Gas Emissions, of the Draft EIR.

Letter 3

541 Washington Avenue
Yuba City, CA 95991
(530) 634-7659
FAX (530) 634-7660
www.fraqmd.org

Christopher D. Brown, AICP
Air Pollution Control Officer

Serving Sutter and Yuba Counties

August 16, 2024

City of Wheatland
Community Development Department
111 C Street
Wheatland, CA 95692

Re: Heritage Oaks DEIR

Dear Kevin Valente,

The Feather River Air Quality Management District (District) appreciates the opportunity to review and comment on the project referenced above.

Comments on Air Quality Analysis

3-1 The District had some questions and concerns about the CalEEMod air quality analysis and appreciates your staff providing the JSON file to review the modeling. The District was not able to connect with staff prior to the review period deadline. District staff looks forward to working with your staff to address the District's comments. The following are some of our concerns:

3-2 1. It appears that a grading phase is being proposed for the project but the acres graded in the model is set at zero. Modeling the project with 0 graded acres may incorrectly reduce the fugitive dust impacts of the project and not fully disclose the project's impacts.

3-3 2. The model is currently set to zero for soil imports and exports, and we would just like to confirm that the correct assumption.

3-4 3. The modeling appears to assume that the construction phase will last until 2033 and the operational phase be 2034. If no houses will be occupied until 2034 then that would be an accurate depiction of the project. If there will be parts of the project constructed and completed in phases, the user guide in CalEEMod recommends the user run the model multiple times for the various input parameters for each operational year.

Construction Phase Comments

3-5 In section 4.1-3 the EIR states:
Project construction would also be required to comply with all application FRAQMD rules and regulations, including Rule 3.0 related to visible emissions and Rule 3.2 related to

ISR

Letter 3 Cont.

particulate matter concentration, and the Standard Construction Mitigation Measures provided in the FRAQMD's Indirect Source Review Guidelines.

3-5 The District recommends including the Standard Construction Mitigation Measures in the EIR as mitigation measures so they must be implemented.

3-6 The District recommends that all development projects with a construction phase submit a completed Fugitive Dust Control Plan for review and approval prior to beginning work.

3-7 Additional rules and regulations applicable to new development have been attached, and include District Rule 3.16 which states that 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. Should any materials and structures be removed from the project site, the materials and/or structures must be disposed of properly. Materials and/or structures being removed, including vegetation, from the project site may not be burned.

Operation Phase Comments

The Mitigation 4.1-2(a) states that:
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.

3-8 However, the CalEEMod air quality analysis appears to assume that only zero-VOC architectural coatings for interior and exterior paint will be used both during construction and operational phases (after the homes have been sold and occupied). The District does not believe that Mitigation Measure 4.1-2(a) is enforceable in its current form for coatings applied during the operational phase. The District recommend returning to the default assumptions in the CalEEMod air quality analysis for operational architectural coatings. Default assumptions use interior and exterior paint that is readily available to purchase by the homeowners.

If the lead agency wanted to make the measure enforceable for exterior paint during the operational phase, it would need to establish a mechanism to limit the homeowner's options of exterior paint, such as through a homeowner's association list of approved paint choices or requiring a building permit to paint the exterior of a home. The District is not aware of a way to make the measure enforceable for interior paint applied in the operational phase.

3-9 The lead agency should include every mitigation measure that is applied in the air quality analysis as a mitigation measure in the EIR. The air quality analysis assumes that wood burning stoves and fireplaces would not be installed, however this has not been included as a mitigation measure in the EIR. The EIR should include a mitigation measure prohibiting installation of wood burning stoves or fireplaces.

3-10 Each residential unit would be subject to the Indirect Source Review (ISR) Fee at the residential rate of $15.00 per unit. The ISR Fee applies to newly constructed residential

Letter 3 Cont.

3-10 homes, apartments, condos, and mobile homes. The ISR fee is based on the number of units, not the square footage.

If you need further information or assistance, please contact me at (530) 634-7659 x209. Air District staff will be available to assist the project proponent or Lead Agency as needed. Please note that the District staff are available to review draft CalEEMod analyses and consult with lead agencies prior to publication of Draft EIRs and we do

3-11 encourage early consultation.

Sincerely,

Peter Angelonides
Air Quality Planner

Enclosures: FRAQMD Construction Phase Mitigation Measures; Fugitive Dust Control Plan; Rules and Regulations Statement

File: Chron

LETTER 3: FEATHER RIVER AIR QUALITY MANAGEMENT DISTRICT

Response to Comment 3-1

The comment is an introductory statement and does not address the adequacy of the Draft EIR.

Response to Comment 3-2

In response to the comment, the CalEEMod modeling has been updated to account for the project site acreage that would be graded as part of the proposed project. Based on the updated CalEEMod modeling results, the proposed project would result in increased construction-related respirable particulate matter (PM_{10}) emissions as compared to the emissions presented in Table 4.1-9 of the Draft EIR. However, construction-related PM_{10} emissions associated with the proposed project would still be below the applicable Feather River Air Quality Management District (FRAQMD) threshold of significance. Construction emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X), as well as construction-related greenhouse gas (GHG) emissions, would remain the same as presented in the Draft EIR.

To account for the change in PM_{10} emissions, Table 4.1-9 of the Draft EIR is hereby revised as follows:

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}	21.2 ~~4.03~~ lbs/day	80 lbs/day	**NO**

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

This minor text change is for clarification purposes and does not affect the adequacy of the environmental analysis contained in the Draft EIR. The revised CalEEMod modeling results are included as Appendix B to this Final EIR.

Response to Comment 3-3

See Response to Comment 2-1.

Response to Comment 3-4

As presented in Table 5.1, Construction Schedule, of the CalEEMod modeling results (see Appendix B of this Final EIR), construction of the entire project is anticipated to occur simultaneously from April 2025 through May 2033. As such, the first full year of operation would be 2034, as correctly presented in the Draft EIR. The assumptions included in the project-specific CalEEMod modeling are adequate, and revisions to the air quality modeling are not required. For clarification purposes, based on the comment, page 4.1-34 of the Draft EIR is hereby revised as follows:

> 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.

Page 4.1-43 of the Draft EIR is hereby revised as follows:

> 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 the large development area of the project site ~~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.

These minor text changes are for clarification only and do not affect the adequacy of the environmental analysis contained in the Draft EIR.

Response to Comment 3-5

As discussed under Impact 4.1-1 of the Draft EIR, the proposed project's maximum construction emissions would be below the applicable FRAQMD thresholds of significance for all criteria pollutants. Given that the proposed project would result in construction-related emissions below the applicable FRAQMD thresholds of significance for all criteria pollutants, compliance with the FRAQMD's Standard Construction Mitigation Measures would not be required in order for the proposed project to result in a less-than-significant impact. Therefore, including a mitigation measure for implementation of the FRAQMD's Standard Construction Mitigation Measures is not warranted. Rather, as discussed on page 4.1-38 of the Draft EIR, the City would require that the FRAQMD 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. Implementation of the Standard Construction Mitigation Measures will be required as a condition of project approval. As such, the discussion included under Impact 4.1-1 of the Draft EIR is adequate.

Response to Comment 3-6

The comment provides a recommendation regarding applicable FRAQMD requirements, and does not specifically address the adequacy of the Draft EIR. As discussed on page 4.1-38 of the Draft EIR, the City would require that the FRAQMD Standard Construction Mitigation Measures provided in the FRAQMD's Indirect Source Review Guidelines be implemented during project construction. The Standard Construction Mitigation Measures require implementation of a Fugitive Dust Control Plan. As such, completion of the Fugitive Dust Control Plan will be required as a condition of project approval. The comment has been noted for the record and will be forwarded to the decisionmakers as part of their consideration of the proposed project.

Response to Comment 3-7

The comment provides background information regarding additional applicable FRAQMD rules and regulations, and does not specifically address the adequacy of the Draft EIR. The proposed project would be required to comply with all FRAQMD rules and regulations, as stated on page 4.1-38 of the Draft EIR. The comment has been noted for the record and will be forwarded to the decisionmakers as part of their consideration of the proposed project.

Response to Comment 3-8

As discussed in Chapter 4.1, Air Quality and Greenhouse Gas Emissions, of the Draft EIR, Mitigation Measure 4.1-2(a) would reduce operational criteria pollutant emissions associated with the proposed project. However, even with implementation of Mitigation Measure 4.1-2(a), the proposed project's operational ROG and NO_X emissions would continue to exceed the applicable thresholds of significance. In addition, as noted by the commenter, mechanisms for enforcement are not available to ensure the continued use of zero-VOC paints, finishes, adhesives, and cleaning supplies. Thus, in response to the comment, revisions to the Draft EIR would be required as follows to remove Mitigation Measure 4.1-2(a) from the Draft EIR.

Table 2-1 in Chapter 2, Executive Summary, of the Draft EIR is hereby revised to reflect the revisions made to Chapter 4.1, Air Quality and Greenhouse Gas Emissions, of the Draft EIR, as presented below. Rather than include the entirety of Table 2-1 with revisions shown where appropriate, only the impact for which mitigation has been revised is presented in this chapter. The revisions to Table 2-1 are presented at the end of this section.

Page 4.1-40 and 4.1-41 of the Draft EIR are hereby revised as follows:

> 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~~ Possible mitigation measures for reducing the proposed project's operational area source emissions ~~through~~ could include the use of zero-VOC paints, finishes, adhesives, and cleaning supplies. However, mechanisms for enforcement are not available to ensure the continued 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 Measure~~s~~ 4.1-2~~(a) and 4.1-2(b)~~, which requires implementation of Mitigation Measure 4.3-3,** 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 Measure~~s~~ 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 Measure~~s~~ 4.1-2~~(a) and (b)~~ is not conclusive, even with implementation of the following mitigation measure~~s~~, 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.*

All other references to Mitigation Measure 4.1-2(a) are hereby revised accordingly, as presented in Chapter 3, Revisions to the Draft EIR Text.

Response to Comment 3-9

See Response to Comment 2-3.

Response to Comment 3-10

The comment provides information regarding the FRAQMD Indirect Source Review Fee, and does not specifically address the adequacy of the Draft EIR. The comment has been noted for the record and will be forwarded to the decisionmakers as part of their consideration of the proposed project.

Response to Comment 3-11

The comment is a conclusory statement and does not address the adequacy of the Draft EIR.

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

Letter 4

CALIFORNIA Water Boards

GAVIN NEWSOM GOVERNOR

YANA GARCIA SECRETARY FOR ENVIRONMENTAL PROTECTION

State Water Resources Control Board

August 21, 2024

Kevin Valente
City of Wheatland
111 C Street
Wheatland, CA 95692

CITY OF WHEATLAND (CITY), ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE HERITAGE OAKS EAST PROJECT (PROJECT); STATE CLEARINGHOUSE # 2024031192

Dear Kevin Valente:

4-1 Thank you for the opportunity to review the EIR for the proposed Project. The State Water Resources Control Board, Division of Drinking Water (State Water Board, DDW) is responsible for issuing water supply permits pursuant to the Safe Drinking Water Act. This Project is within the jurisdiction of the State Water Board, DDW's Valley District. DDW Valley District issues domestic water supply permit amendments to the public water systems serviced with new or modified sources of domestic water supply or new domestic water system components pursuant to Waterworks Standards (Title 22 California Code of Regulations chapter 16 et. seq.).

4-2 A public water system requires a new water supply permit amendment when changes are made to a domestic water supply source, storage, or treatment and for the operation of new water system components- as specified in the in the Cal. Code Regs. Tit. 22, § 64556. The City will need to apply for a water supply permit amendment for this Project for proposed changes to the domestic water supply resulting from this Project.

The State Water Board, DDW, as a responsible agency under the California Environmental Quality Act (CEQA) has the following comments on the County's EIR:

4-3
- According to the Department of Water Resources (DWR), Sustainable Groundwater Management Act prioritization dashboard, the Project falls within the Sacramento Valley- South Yuba groundwater basin. DWR identifies the South Yuba groundwater basin as a high priority basin (DWR, ibid) and approved the Groundwater Sustainability Plan on November 18, 2021 (DWR, SIGMA Portal). Please address the following:

4-4
  - Discuss if the project water demand associated with the Project was included in the most recently adopted urban water management plan (Cal Code of Regs. § 10910 [2]). If so, please attach the urban water management plan. If not, as part of the water supply assessment, please

Letter 4 Cont.

4-4 Cont. include the consideration of normal, single, dry, and multiple dry years (Cal Code of Regs. § 10910 [3]) and a determination on if there will be enough water for the project during normal, single, dry, and multiple dry years over a 20-year projection.

4-5
- The EIR states "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 (PDF page 220)." Please update this to reflect that the entity with regulatory authority over public water systems, including water supply permits and tank designs, is the State Water Resources Control Board, Division of Drinking Water, not the YCEHD.

4-6
- Two wells have been drilled and permitted since the original grading of the Project (California Drinking Water Watch). The EIR mentioned one existing well will serve the development (PDF page 78). If any other existing or new wells will serve the Project, please include them in the Project description and consider the construction and operational impacts of the well(s), as needed. Please also discuss the maintenance and operation of the tank.

4-7
- Stormwater from the west detention basin will be discharged to Grasshopper Slough (EIR PDF pages 78, 225, and 269). Please discuss if Grasshopper Slough is considered a Water of the United States (WOTUS) and/or a Water of the State (WOTS). Please also discuss any permits needed for the discharge into a WOTUS or WOTS, as applicable.

4-8
When the CEQA review process is completed, please forward the following items with the permit application to the State Water Board, DDW Valley District Office at DWPRedding@waterboards.ca.gov:
- Copy of the EIR and Mitigation Monitoring and Reporting Plan (MMRP);
- Copy of all comment letters received and the lead agency responses as appropriate;
- Copy of the Resolution or Board Minutes adopting the EIR and MMRP; and
- Copy of the date stamped Notice of Determination filed at the Yuba County Clerk's Office and the Governor's Office of Planning and Research, State Clearinghouse.

4-9
Please contact Lori Schmitz of the State Water Board at (916) 449-5285 or Lori.Schmitz@waterboards.ca.gov, for questions regarding this comment letter.

Sincerely,

Lori Schmitz Digitally signed by Lori Schmitz Date: 2024.08.21 15:20:35 -07'00'

Lori Schmitz
Environmental Scientist
Division of Financial Assistance
Special Project Review Unit

Letter 4 Cont.

1001 I Street, 16th floor
Sacramento, CA 95814

Cc:

Office of Planning and Research, State Clearinghouse

Rebecca Tabor
District Engineer
Valley District

Dan Cikuth
Associate Sanitary Engineer
Valley District

LETTER 4: CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

Response to Comment 4-1
The comment is an introductory statement and does not address the adequacy of the Draft EIR.

Response to Comment 4-2
The comment does not address the adequacy of the Draft EIR.

Response to Comment 4-3
The comment does not address the adequacy of the Draft EIR.

Response to Comment 4-4
The City of Wheatland has not adopted an Urban Water Management Plan (UWMP). A discussion of water supply and demand is provided on pages 4.5-2 through 4.5-7, and 4.5-24 through 4.5-26 of Chapter 4.5, Utilities and Service Systems, of the Draft EIR. As discussed under Impact 4.5-2 in Chapter 4.5, Utilities and Service Systems, of the Draft EIR, the City would have sufficient water supplies available to serve buildout of the proposed project and reasonably foreseeable future development. A Water Supply Assessment (WSA) was prepared for the proposed project and is attached as Appendix C to this Final EIR. As presented therein, the South Yuba County Groundwater Subbasin has sufficient groundwater supplies to meet demands through 2043 during normal, single dry, and multiple dry years. The WSA amplifies the analysis of water supply and demand conducted in the Draft EIR, which was based on the Water Demand and Supply Assessment Technical Memorandum (Appendix F of the Draft EIR) prepared for the proposed project that informed the WSA.

Response to Comment 4-5
In response to the comment, page 4.5-24 of the Draft EIR is hereby revised as follows:

> 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)~~ SWRCB for the installation of the new water storage tank, demonstrating proper compliance with the applicable regulations established by ~~YCEHD~~ the SWRCB related to water tank design.

Response to Comment 4-6
The only well that would provide water service to the project site is the existing well located in the project site's 0.86-acre Parcel B. Maintenance and operation of the storage tank does not pertain to physical environmental impacts and is, therefore, outside the purview of CEQA analysis.

Response to Comment 4-7
With regard to the jurisdictional status of Grasshopper Slough, an area outside of the northwest boundary of the project site is described in the U.S. Geological Survey (USGS) National Hydrography Database (NHD) as an ephemeral drainage. The feature is the ephemeral upper boundary of an intermittent tributary to the historic pathway of Grasshopper Slough. The slough has since been channelized and is currently directed northward into Dry Creek, east of SR 65. An aquatic resources delineation (ARD) or jurisdictional determination has not been conducted to determine the precise boundary of the feature adjacent to the project site, as the feature is located outside of the project site. It should be noted that, since the Draft EIR was prepared, minor revisions to the Interim Drainage Plan have been made. The revised plan is included as Appendix

D to this Final EIR. As a result of the revised Interim Drainage Plan, page 3-7 of the Draft EIR is hereby revised as follows:

> 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 hydraulically connected by way of a 48-inch storm drain line. From the ~~west~~ connected detention basin, ~~peak flows~~ stormwater would ~~be metered to Grasshopper Slough through a~~ gravity ~~outfall structure,~~ flow overland by way of a vegetated bioswale constructed in uplands. Although the final location of the gravity outflow would be determined during design in coordination with the City, the most likely gravity outflow would be from the eastern detention basin. ~~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.~~

All other such references to the outlet to Grasshopper Slough have been revised, as shown in Chapter 3, Revisions to the Draft EIR Text.

In accordance with the above, the proposed project would be designed to fully avoid placing any fill material near or into Grasshopper Slough. A site visit conducted as part of the Biological Resources Assessment (BRA) prepared for the proposed project confirmed that adequate space exists between the existing graded detention feature and the tributary feature to allow for construction activities to avoid placing fill in the tributary feature. The City will include a condition of project approval to ensure avoidance of Grasshopper Slough during construction activities. Because fill is not expected to be placed within the tributary feature as part of the proposed project, Clean Water Act (CWA) Section 404 and 401 permits would not be required. In addition, because the proposed project design would not encroach into Grasshopper Slough or its associated riparian areas, a Lake or Streambed Alteration Agreement (LSAA) would not be required.

With respect to water quality impacts, the proposed project would be subject to Mitigation Measures 4.6-24 and 4.6-25, which require preparation and implementation of a SWPPP and a detailed BMP and water quality maintenance plan. The aforementioned requirements would be sufficient to ensure water quality impacts to Grasshopper Slough would not occur.

Response to Comment 4-8

The comment does not address the adequacy of the Draft EIR and will be forwarded to the project applicant and decision-makers for their consideration.

Response to Comment 4-9

The comment is a conclusory statement and does not address the adequacy of the Draft EIR.

3. Revisions to the Draft EIR Text

3. REVISIONS TO THE DRAFT EIR TEXT

3.1 INTRODUCTION

The Revisions to the Draft EIR Text chapter presents minor corrections, additions, and revisions made to the Draft EIR published by the Lead Agency (City of Wheatland).

The changes represent minor clarifications/amplifications of the analysis contained in the Draft EIR and do not constitute significant new information that, in accordance with CEQA Guidelines, Section 15088.5, would trigger the need to recirculate portions or all of the Draft EIR.

3.2 DESCRIPTION OF CHANGES

New text is double underlined and deleted text is ~~struck through~~. Text changes are presented in the page order in which they appear in the Draft EIR.

2 EXECUTIVE SUMMARY

Table 2-1 in Chapter 2, Executive Summary, of the Draft EIR is hereby revised to reflect the revisions made to Chapter 4.1, Air Quality and Greenhouse Gas Emissions, and Chapter 4.4, Tribal Cultural Resources, of the Draft EIR, as presented below. Rather than include the entirety of Table 2-1 with revisions shown where appropriate, only the impact for which mitigation has been revised is presented in this chapter. The revisions to Table 2-1 are presented at the end of this chapter.

3 PROJECT DESCRIPTION

The last paragraph on page 3-7 of the Draft EIR is hereby revised as follows:

> 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 hydraulically connected by way of a 48-inch storm drain line. From the ~~west~~ connected detention basin, ~~peak flows~~ stormwater would ~~be metered to Grasshopper Slough through a~~ gravity ~~outfall structure~~, flow overland by way of a vegetated bioswale constructed in uplands. Although the final location of the gravity outflow would be determined during design in coordination with the City, the most likely gravity outflow would be from the eastern detention basin. ~~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.~~

The above changes are for clarification purposes and do not affect the adequacy of the environmental analysis contained in the Draft EIR.

4.1 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Table 4.1-2 on page 4.1-4 of the Draft EIR is hereby revised as follows:

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~~ 9 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. California Ambient Air Quality Standards. ~~May 4, 2016.~~ Available at: ~~https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.~~ https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed ~~October 2022~~ August 2024.***

The Standards of Significance section on page 4.1-34 of the Draft EIR is hereby revised as follows:

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.

Table 4.1-9 on page 4.1-39 of Chapter 4.1, Air Quality and Greenhouse Gas Emissions, of the Draft EIR is hereby revised as follows:

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}	21.2 ~~4.03~~ lbs/day	80 lbs/day	**NO**

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

The revised CalEEMod modeling results are included as Appendix B to this Final EIR.

Page 4.1-40 and 4.1-41 of the Draft EIR are hereby revised as follows:

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~~ Possible mitigation measures for reducing the proposed project's operational area source emissions ~~through~~ could include the use of zero-VOC paints, finishes, adhesives, and cleaning supplies. However, mechanisms for enforcement are not available to ensure the continued 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 Measure~~s~~ 4.1-2~~(a) and 4.1-2(b)~~, which requires implementation of Mitigation Measure 4.3-3, 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**

(continued on next page)

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.*

Impact 4.1-3, regarding exposing sensitive receptors to substantial pollutant concentrations, on page 4.1-43 of the Draft EIR is hereby revised as follows:

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 the large development area of the project site ~~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.

Page 4.1-48 of the Draft EIR is hereby revised as follows:

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 Measure~~s~~ 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.

Page 4.1-49 of the Draft EIR is hereby revised as follows:

Nonetheless, as discussed in Impact 4.1-2, even with implementation of Mitigation Measure~~s~~ 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.

4.1-5 Implement Mitigation Measure~~s~~ 4.1-2~~(a) and 4.1-2(b)~~.

The above changes are for clarification purposes and do not affect the adequacy of the environmental analysis contained in the Draft EIR.

4.4 TRIBAL CULTURAL RESOURCES

Since the Draft EIR was circulated for public review, the United Auburn Indian Community of the Auburn Rancheria (UAIC) has provided additional input as part of the Assembly Bill (AB) 52 tribal consultation process regarding the environmental analysis and mitigation measures set forth within the Draft EIR pertaining to tribal cultural resources. As a result of the UAIC's input, the following revisions are hereby made to the Draft EIR.

Page 4.4-6 of the Draft EIR is hereby revised as follows:

> 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.
>
> UAIC conducted background research for the identification of tribal resources for the proposed project, which included a review of pertinent literature, historic maps, and a records search using UAIC's Tribal Historic Information System (THRIS). UAIC's THRIS database is composed of UAIC's areas of oral history, ethnographic history, and places of cultural and religious significance, including UAIC's Sacred Lands that are submitted to the NAHC. The THRIS resources shown in the region also include previously recorded indigenous resources identified through the CHRIS, as well as historic resources and survey data.

Mitigation Measure 4.4-1(b) on pages 4.4-9 and 4.4-10 of the Draft EIR is hereby revised as follows:

> *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)~~.~~ ,or an agreed upon distance based on the project area and nature of the find. Work shall cease in and within the immediate vicinity of the find regardless of whether the construction is being actively monitored by a Tribal Monitor, cultural resources specialist, or professional archaeologist. Examples of potential cultural materials include ash or charcoal deposits, 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.*

The construction contractor(s) shall provide secure, on-site storage for culturally sensitive soils or objects that are components of tribal cultural resources that are found or recovered during construction. Only Tribal representatives shall have access to the storage. Storage size shall be determined by the nature of the tribal cultural resource and can range from a small lock box to a conex box (shipping container). A secure (locked), fenced area can also provide adequate on-site storage if larger amounts of material must be stored.

The construction contractor(s) and City of Wheatland shall facilitate the respectful reburial of the culturally sensitive soils or objects, which may include providing a reburial location consistent with the Tribe's preferences, excavation of the reburial location, and assisting with the reburial, upon request.

Any discoveries shall be documented on a Department of Parks and Recreation (DPR) 523 form within two weeks of the discovery and submitted to North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) in a timely manner.

Work at the tribal cultural resource discovery location shall not resume until authorization is granted by the City of Wheatland in coordination with the culturally affiliated 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.

Mitigation Measure 4.4-1(c) on pages 4.4-10 and 4.4-11 of the Draft EIR is hereby revised as follows:

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~~ months' notice, if feasible, 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)~~ project area. 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 review and confirm the discovery. The Tribal Monitor shall notify the City immediately, as well as any other appropriate agency and/or individuals, to coordinate regarding appropriate and respectful treatment pursuant to State law.

Appropriate treatment of tribal cultural resources may include, but is not limited to, the following:

- *Recordation of the resource(s)*
- *Avoidance and preservation of the resource(s)*
- *Recovery and reburial of the resource(s) on-site or in a feasible off-site location in a designated area not subject to future disturbance. The location of the reburial shall be acceptable to the AUIC.*

To track the implementation of this measure, the Tribal Monitor(s) shall document field-monitoring activities on a Tribal Monitor log. The Tribal Monitor shall wear appropriate construction safety equipment including steel-toed boots, construction vest, and hard hat.

The Tribal Monitor, in consultation with the UAIC Tribal Historic Preservation officer and the project applicant, shall determine a mutual end or reduction to the on-site monitoring if/when construction activities have a low potential for impacting tribal cultural resources. The City of Wheatland shall assist with resolution of disagreements between the project applicant/contractor and the UAIC if such occurs.

The above changes are for clarification purposes and do not affect the adequacy of the environmental analysis contained in the Draft EIR.

4.5 UTILITIES AND SERVICE SYSTEMS

The last paragraph on page 4.5-24 of the Draft EIR is hereby revised as follows:

> 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)~~ SWRCB for the installation of the new water storage tank, demonstrating proper compliance with the applicable regulations established by ~~YCEHD~~ the SWRCB related to water tank design.

The first paragraph on page 4.5-29 is hereby revised as follows:

> […] The detention basins would be hydraulically connected by way of a 48-inch storm drain line. From the ~~west~~ connected detention basin, ~~peak flows~~ stormwater would ~~be metered to Grasshopper Slough through a~~ gravity ~~outfall structure.~~, flow overland by way of a vegetated bioswale constructed in uplands. Although the final location of the gravity outflow would be determined during design in coordination with the City, the most likely gravity outflow would be from the eastern detention basin. ~~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.~~

The above changes are for clarification purposes and do not affect the adequacy of the environmental analysis contained in the Draft EIR.

5 STATUTORILY REQUIRED SECTIONS

Page 5-6 and 5-7 of the Draft EIR are hereby revised as follows:

> **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 Measure~~s~~ 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 4.1-11~~2~~, even with implementation of Mitigation Measure~~s~~ 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 Measure~~s~~ 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 4.1-10~~1~~ 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 4.1-10~~1~~ 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 Measure~~s~~ 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*.

The above changes do not affect the adequacy of the environmental analysis contained in the Draft EIR.

6 ALTERNATIVES ANALYSIS

Page 6-10 of the Draft EIR is hereby revised as follows:

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 Measure~~s~~ 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.

Page 6-14 of the Draft EIR is hereby revised as follows:

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 Measure~~s~~ 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.

The above changes do not affect the adequacy of the environmental analysis contained in the Draft EIR.

8 REFERENCES

Page 8-1 of the Draft EIR is hereby revised as follows in accordance with the above changes:

7. California Air Resources Board. *California Ambient Air Quality Standards.* ~~May 4, 2016.~~ Available at: ~~https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf.~~ https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed ~~April~~ August 2024.

The minor changes are for clarification purposes only and do not affect the adequacy or conclusions of the environmental analysis contained in the Draft EIR.

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					
4.1-2	**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
4.4 Tribal Cultural Resources					
4.4-1	**Cause a substantial adverse change in the significance of a tribal cultural resource, as defined in PRC Section 21074.**	S	*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)~~.~~ .or an agreed upon distance based on the project area and nature of the find. Work shall cease in and within*	SU

Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		the immediate vicinity of the find regardless of whether the construction is being actively monitored by a Tribal Monitor, cultural resources specialist, or professional archaeologist. Examples of potential cultural materials include ash or charcoal deposits, 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*	

Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		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. *The construction contractor(s) shall provide secure, on-site storage for culturally sensitive soils or objects that are components of tribal cultural resources that are found or recovered during construction. Only Tribal representatives shall have access to the storage. Storage size shall be determined by the nature of the tribal cultural resource and can range from a small lock box to a conex box (shipping container). A secure (locked), fenced area can also provide adequate on-site storage if larger amounts of material must be stored.* *The construction contractor(s) and City of Wheatland shall facilitate the respectful reburial of the culturally sensitive soils or objects, which may include providing a reburial location consistent with the Tribe's preferences, excavation of the reburial location, and assisting with the reburial, upon request.* *Any discoveries shall be documented on a Department of Parks and Recreation (DPR) 523 form within two weeks of the discovery and submitted to North Central*	

Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		Information Center (NCIC) of the California Historical Resources Information System (CHRIS) in a timely manner. *Work at the tribal cultural resource discovery location shall not resume until authorization is granted by the City of Wheatland in coordination with the culturally affiliated 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*	

Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		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~~ months' notice, if feasible, 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)~~ project area. 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*	

Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		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 review and confirm the discovery. The Tribal Monitor shall notify the City immediately, as well as any other appropriate agency and/or individuals, to coordinate regarding appropriate and respectful treatment pursuant to State law.* *Appropriate treatment of tribal cultural resources may include, but is not limited to, the following:*	

Table 2-1
Summary of Impacts and Mitigation Measures

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• *Recordation of the resource(s)* • *Avoidance and preservation of the resource(s)* • *Recovery and reburial of the resource(s) on-site or in a feasible off-site location in a designated area not subject to future disturbance. The location of the reburial shall be acceptable to the AUIC.* *To track the implementation of this measure, the Tribal Monitor(s) shall document field-monitoring activities on a Tribal Monitor log. The Tribal Monitor shall wear appropriate construction safety equipment including steel-toed boots, construction vest, and hard hat.* *The Tribal Monitor, in consultation with the UAIC Tribal Historic Preservation officer and the project applicant, shall determine a mutual end or reduction to the on-site monitoring if/when construction activities have a low potential for impacting tribal cultural resources. The City of Wheatland shall assist with resolution of disagreements between the project applicant/contractor and the UAIC if such occurs.*	

4. Mitigation Monitoring and Reporting Program

4. MITIGATION MONITORING AND REPORTING PROGRAM

4.1 INTRODUCTION

Section 15097 of the California Environmental Quality Act (CEQA) requires all State and local agencies to establish monitoring or reporting programs for projects approved by a public agency whenever approval involves the adoption of either a "mitigated negative declaration" or specified environmental findings related to environmental impact reports.

The following is the Mitigation Monitoring and Reporting Program (MMRP) for the Heritage Oaks Estates East Project (proposed project). The intent of the MMRP is to ensure implementation of the mitigation measures identified within the EIR for the proposed project. Unless otherwise noted, the cost of implementing the mitigation measures as prescribed by this MMRP shall be funded by the applicant.

4.2 COMPLIANCE CHECKLIST

The MMRP contained herein is intended to satisfy the requirements of CEQA as they relate to the EIR prepared for the proposed project. This MMRP is intended to be used by City of Wheatland staff and mitigation monitoring personnel to ensure compliance with mitigation measures during project implementation. Mitigation measures identified in this MMRP were developed in the EIR.

The EIR presents a detailed set of mitigation measures that will be implemented throughout the lifetime of the project. Mitigation is defined by CEQA Guidelines, Section 15370, as a measure that:

- Avoids the impact altogether by not taking a certain action or parts of an action;
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifies the impact by repairing, rehabilitating, or restoring the impacted environment;
- Reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project; or
- Compensates for the impact by replacing or providing substitute resources or environments.

The intent of the MMRP is to ensure the implementation of adopted mitigation measures. The MMRP will provide for monitoring of construction activities as necessary and in-the-field identification and resolution of environmental concerns.

Monitoring and documenting the implementation of mitigation measures will be coordinated by City of Wheatland. The table attached to this report identifies the mitigation measures, the monitoring action for each mitigation measure, the responsible party for the monitoring action, and timing of the monitoring action. The applicant will be responsible for fully understanding and

effectively implementing the mitigation measures contained within the MMRP. The City will be responsible for monitoring compliance.

4.3 MITIGATION MONITORING AND REPORTING PROGRAM

The following table indicates the mitigation measure number, the impact the measure is designed to address, the measure text, the monitoring agency, implementation schedule, and an area for sign-off indicating compliance.

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
4.1 Air Quality and Greenhouse Gas Emissions					
4.1-2	Conflict with or obstruct implementation of the applicable air quality plan during project operation.	*4.1-2 Implement Mitigation Measure 4.3-3.*	See Mitigation Measure 4.3-3	See Mitigation Measure 4.3-3	
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).	*4.1-5 Implement Mitigation Measure 4.1-2.*	See Mitigation Measure 4.1-2	See Mitigation Measure 4.1-2	
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.	*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;*	City of Wheatland Community Development Department	Prior to approval of project Improvement Plans	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		○ *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.*			
4.3 Transportation					
4.3-1	Conflict with a program, plan, ordinance, or policy addressing the circulation system during construction activities.	*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*	City of Wheatland Public Works Department California Department of Transportation (Caltrans)	Prior to issuance of grading and building permits	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.*			
4.3-3	Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).	*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*	City of Wheatland Department of Public Works	Prior to the issuance of building permits	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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).*			
4.4 Tribal Cultural Resources					
4.4-1	Cause a substantial adverse change in the significance of a tribal cultural resource, as defined in PRC Section 21074.	*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*	City of Wheatland Community Development Department	Prior to initiation of construction	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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*			

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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) or an agreed upon distance based on the project area and nature of the find. Work shall cease in and within the immediate vicinity of the find regardless of whether the construction is being actively monitored by a Tribal Monitor, cultural resources specialist, or professional archaeologist. Examples of potential cultural materials include ash or charcoal*	City of Wheatland Community Development Department County Coroner NAHC Native American Representative	During project construction and noted on project Improvement Plans	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		deposits, 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.*			

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		The construction contractor(s) shall provide secure, on-site storage for culturally sensitive soils or objects that are components of tribal cultural resources that are found or recovered during construction. Only Tribal representatives shall have access to the storage. Storage size shall be determined by the nature of the tribal cultural resource and can range from a small lock box to a conex box (shipping container). A secure (locked), fenced area can also provide adequate on-site storage if larger amounts of material must be stored. *The construction contractor(s) and City of Wheatland shall facilitate the respectful reburial of the culturally sensitive soils or objects, which may include providing a reburial location consistent with the Tribe's preferences, excavation of the reburial location, and assisting with the reburial, upon request.* *Any discoveries shall be documented on a Department of Parks and Recreation (DPR) 523 form within two weeks of the discovery and submitted to North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) in a timely manner.*			

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		Work at the tribal cultural resource discovery location shall not resume until authorization is granted by the City of Wheatland in coordination with the culturally affiliated 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*			

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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) months' notice, if feasible, 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.*	City of Wheatland Community Development Department The United Auburn Indian Community of the Auburn Rancheria (UAIC)	During project construction as noted on project Improvement Plans	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.* *Appropriate treatment of tribal cultural resources may include, but is not limited to, the following:* • *Recordation of the resource(s)* • *Avoidance and preservation of the resource(s)* • *Recovery and reburial of the resource(s) on-site or in a feasible off-site location in a designated area not subject to future disturbance. The location of the*			

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		reburial shall be acceptable to the AUIC. *To track the implementation of this measure, the Tribal Monitor(s) shall document field-monitoring activities on a Tribal Monitor log. The Tribal Monitor shall wear appropriate construction safety equipment including steel-toed boots, construction vest, and hard hat.* *The Tribal Monitor, in consultation with the UAIC Tribal Historic Preservation officer and the project applicant, shall determine a mutual end or reduction to the on-site monitoring if/when construction activities have a low potential for impacting tribal cultural resources. The City of Wheatland shall assist with resolution of disagreements between the project applicant/contractor and the UAIC if such occurs.*			
4.5 Utilities and Service Systems					
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	*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*	City Engineer	As part of the Improvement Plan and final map submittal process	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
	exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	*Construction Standards that are in effect at the time of improvement plan submittal.*			
4.6 Other Effects					
4.6.4 Biological Resources					
4.6.4	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.	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,*	City of Wheatland Community Development Department CDFW	Within seven days prior to ground-disturbing activities that are scheduled to occur during the flight season (February through October)	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.* <u>Northwestern Pond Turtle</u> *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.*	City of Wheatland Community development Department	Ten days prior to the start of ground or vegetation disturbing activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.	City of Wheatland Community Development Department	Forty-eight hours prior to the start of ground-or-vegetation-disturbing activities	
		<u>Valley Elderberry Longhorn Beetle</u> *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-*	City of Wheatland Community Development Department	Prior to commencement of construction activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.	City of Wheatland Community of Development Department	Prior to commencement of construction activities	
		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.	City of Wheatland Community Development Department	During construction activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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*	City of Wheatland Community Development Department CDFW	Prior to any construction activities that may impact pallid bat habitat (e.g., mature trees)	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.* <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*	City of Wheatland	Prior to the removal of any trees and	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.	Community Development Department CDFW	shrubs that are determined by a qualified bat biologist to be suitable day-roosting habitat for western red bat	
		<u>Swainson's Hawk</u> *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*	City of Wheatland Community Development Department CDFW	Within 14 days to the start of ground-or-vegetation-disturbing activities, if construction activities occur between March 1 to August 31	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.	CDFW City of Wheatland Community Development Department	Prior to the commencement of ground disturbing activities	
		<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*	City of Wheatland Community Development Department CDFW	Prior to the commencement of ground-disturbing activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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. <u>Tricolored Blackbird</u> *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.*	City of Wheatland Community Development Department CDFW	Within 30 days prior to the start of construction activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.*	City of Wheatland Community Development Department CDFW	Within 14 days prior to the start of any ground-or-vegetation-disturbing activities, if construction activities begin during February 1 to September 30	
4.6.4	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.	*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*	City of Wheatland Community Development Department	Prior to the commencement of ground-disturbing activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project						
Impact Number	**Impact**	**Mitigation Measures**		**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
			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.			
4.6.4	e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	*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.*	City of Wheatland Community Development Department	Prior to commencement of ground-disturbing activities, including tree removal	
4.6.5 Cultural Resources						
4.6.5	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	*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*	City of Wheatland Community Development Department	Prior to commencement of any construction activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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*	City of Wheatland Community Development Department	Prior to the start of trenching activity	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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:*	City Engineer Yuba County Coroner NAHC	Prior to issuance of grading permits and noted on project Improvement Plans	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		• *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*			

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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*			

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project						
Impact Number	**Impact**	**Mitigation Measures**		**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
			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.			
4.6.7 Geology and Soils						
4.6.7	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. c) Be located on a geologic unit or soil that is unstable as a result of	*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*	City Engineer	Prior to issuance of any grading permits	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project						
Impact Number	**Impact**	**Mitigation Measures**		**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
	the project, and potentially result in, on, or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.		*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.*			
4.6.7	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.	*4.6-20*	*Implement Mitigation Measure 4.6-19.*	See Mitigation Measure 4.6-19.	See Mitigation Measure 4.6-19.	
4.6.7	f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	*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 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*	City of Wheatland Community Development Department	Should paleontological resources be discovered during ground disturbing activities	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project						
Impact Number	**Impact**	**Mitigation Measures**		**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
			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						
4.6.8	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.	*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*	City of Wheatland Community Development Department YCEHD DTSC	Prior to the approval of grading permits	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project						
Impact Number	**Impact**	**Mitigation Measures**		**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
			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.*	City of Wheatland Community Development Department YCEHD	Prior to Improvement Plan approval	
4.6.9 Hydrology and Water Quality						
4.6.9	a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	*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*	Central Valley RWQCB City Engineer	Prior to issuance of any grading permits	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		(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.	City Engineer	Prior to approval of final project Improvement Plans	

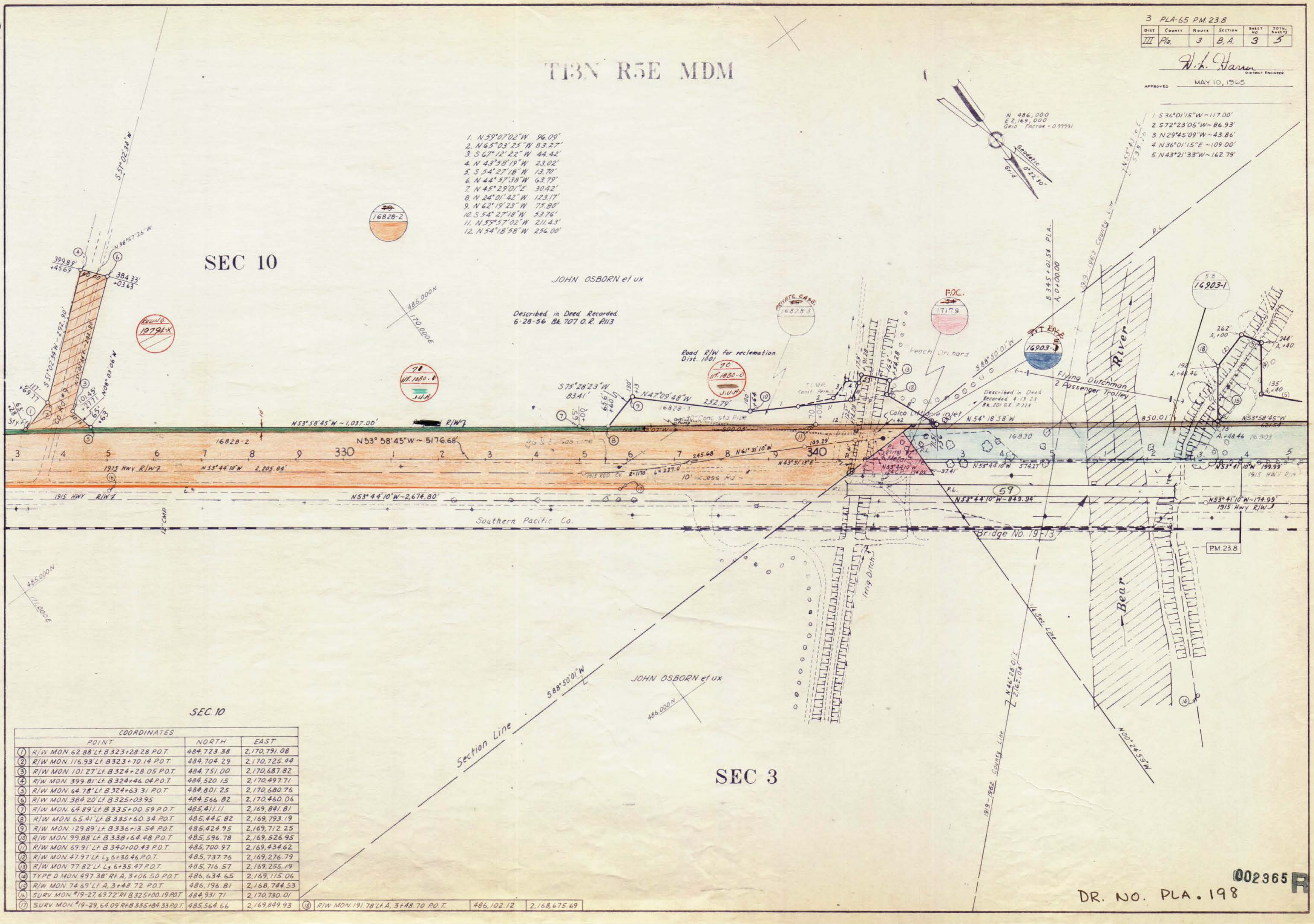
MITIGATION MONITORING AND REPORTING PROGRAM
Heritage Oaks Estates East Project

Impact Number	Impact	Mitigation Measures		Monitoring Agency	Implementation Schedule	Sign-off
4.6.9	c) Substantially alter the existing drainage pattern of the site or area, including trough 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.	*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.*	City Engineer	Prior to construction of the foundation or at the completion of final grading, whichever comes first	
		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*	City Engineer	Prior to issuance of building permits	

MITIGATION MONITORING AND REPORTING PROGRAM Heritage Oaks Estates East Project					
Impact Number	**Impact**	**Mitigation Measures**	**Monitoring Agency**	**Implementation Schedule**	**Sign-off**
		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.			

Appendix A

198



3 PLA-65 P.M. 23.8

DIST	COUNTY	ROUTE	SECTION	SHEET NO	TOTAL SHEETS
III	Pla.	3	B, A.	3	5

W. L. Warren
DISTRICT ENGINEER

APPROVED MAY 10, 1965

1. S 36°01'15"W ~ 117.00'
2. S 72°23'05"W ~ 86.93'
3. N 29°45'09"W ~ 43.86'
4. N 36°01'15"E ~ 109.00'
5. N 43°21'33"W ~ 162.79'

1. N 59°07'02"W 96.09'
2. N 65°03'25"W 83.27'
3. S 67°12'22"W 44.42'
4. N 43°58'19"W 23.02'
5. S 54°27'18"W 13.70'
6. N 44°57'38"W 63.79'
7. N 45°29'01"E 30.42'
8. N 24°01'42"W 123.17'
9. N 62°19'23"W 75.80'
10. S 54°27'18"W 53.76'
11. N 59°57'02"W 211.43'
12. N 54°18'58"W 256.00'

SEC. 10

COORDINATES

	POINT	NORTH	EAST
1	R/W MON. 62.88' Lt. B 323+28.28 P.O.T.	484,723.38	2,170,791.08
2	R/W MON. 116.93' Lt. B 323+70.14 P.O.T.	484,704.29	2,170,725.44
3	R/W MON. 101.27' Lt. B 324+28.05 P.O.T.	484,751.00	2,170,687.82
4	R/W MON. 399.81' Lt. B 324+46.04 P.O.T.	484,520.15	2,170,497.71
5	R/W MON. 64.78' Lt. B 324+63.31 P.O.T.	484,801.25	2,170,680.76
6	R/W MON. 384.20' Lt. B 325+03.95	484,566.82	2,170,460.06
7	R/W MON. 64.89' Lt. B 335+00.59 P.O.T.	485,411.11	2,169,841.81
8	R/W MON. 65.41' Lt. B 335+60.34 P.O.T.	485,445.82	2,169,793.19
9	R/W MON. 129.89' Lt. B 336+13.54 P.O.T.	485,424.95	2,169,712.25
10	R/W MON. 99.88' Lt. B 338+64.48 P.O.T.	485,596.78	2,169,526.95
11	R/W MON. 69.91' Lt. B 340+00.43 P.O.T.	485,700.97	2,169,434.62
12	R/W MON. 47.97' Lt. L_3 6+30.46 P.O.T.	485,737.76	2,169,276.79
13	R/W MON. 77.82' Lt. L_3 6+35.47 P.O.T.	485,716.57	2,169,255.19
14	TYPE D MON. 497.38' Rt. A, 3+06.50 P.O.T.	486,634.65	2,169,115.06
15	R/W MON. 74.69' Lt. A, 3+48.72 P.O.T.	486,196.81	2,168,744.53
16	SURV. MON. #19-27, 69.72' Rt. B 325+00.19 P.O.T.	484,931.71	2,170,730.01
17	SURV. MON. #19-29, 64.09' Rt. B 335+84.33 P.O.T.	485,564.66	2,169,849.93
18	R/W MON. 191.78' Lt. A, 3+48.70 P.O.T.	486,102.12	2,168,675.69

002365 R

DR. NO. PLA. 198

199

LAND BETWEEN 1856 AND 1962 RIVER LOCATIONS

T13N R5E MDM

SEC 3

3 PLA-YUB-65 PM 24.1/0.1

DIST	COUNTY	ROUTE		TOTAL PROJECT
III	Pla.Yub	3	8, A	4 / 5

W. L. Warren
DISTRICT ENGINEER
APPROVED MAY 10, 1965

SEC 10 — JOHN OSBORN et ux

SEC 4 — SUTTER CO.

Section Line S 88° 30' 01" W

N. 487,000
E. 2,168,000
Grid Factor = 0.99991

Geodetic 0°22'22"

486,000N
168,000E

1962-1962 County Line

S 88° 32' 23" E 1,536.39'

SB 16903-1

*NOTE RE: ACREAGE:
R/W Take 5.09± Ac Total R/W
(Sutter Co. 4.55± Ac. & Pla. Co. 0.54± Ac)
Highway U.E. Total 9± Ac Total Taken
(Yuba Co. = 12.4 ± Ac & Pla. Co. = 0.7 ± Ac)
Railroad U.E. To Be Taken For Hwy = 5.3 ± Ac
(Yuba Co. = 5.0 ± Ac & Pla. Co. = 0.2 ± Ac)
(River Lands = 0.2 ± Ac)
Remainder = 7.1 ± Ac (Including River Lands)
& Remaining R/W U.E.
(Yuba Co. = 1.30 ± Ac & Pla. Co. = 1 ± Ac)

"A" Line
R = 7600'
Δ = 3°58'45"
T = 264.02'
L = 527.82'

R/W Curve
R = 6000'
Δ = 3°58'45"
T = 208.43'
L = 416.70'

"A" 11+57.31

"A" 16+85.13

"A" 21+37.80

487,000N
162,000E

1915 Hwy. R/W Described in Deeds Recorded 10-8-15, Bk. 159 of Deeds P. 44, Pla. Co. and; Recorded 3-24-34 Vol. 328 O.R. Pla. Co. P. 393

Described in Deed Recorded 7-12-41 Bk. 63 O.R. P. 236
John Sohrakoff et al

TO UT 1080.0 J.U.A.

P.T. Easement 16903-E

TEMP: Const. Permit

192' +48.4±

N53°58'45"W - 621.54'

Beach Partners

N53°58'45"W - 5,176.68'

N53°41'10"W - 199.99'

1915 Hwy R/W

N53°42'15"W - 1,867.45

Proposed C.I.W.G. R=6000'

16903

N50°00'00"W - 654.63'

N50°15'55"W

N50°00'00"W 452.62'

N66°57'37"E 463.68'

PM 24.1

496.87'

N66°57'37"E 455.63'

John Sohrakoff et al

1929 Hwy. R/W

N53°44'15"W - 1,837.73'

N53°46'26"W 1543.44'

N53°44'15"W - 1,834.63'

STATE HIGHWAY ROUTE 3 (59)

N53°41'10"W 174.99'

S57°52'15"E - 424.74'

N53°42'15"W

W70°04'57"E 45.22'

N53°42'15"W - 1,820.65'

1915 HWY. R/W

1929 HWY. R/W

Southern Pacific Co.

PM 0.0

PM 0.1

Barbara Ann Horst, et al

1. S 36°01'15" W 117.00'
2. S 72°23'05" W 86.93'
3. N 29°45'09" W 43.86'
4. N 36°01'15" E 109.00'
5. N 43°21'33" W 162.70'
6. N 53°58'45" W 135.80'
7. N 70°28'59" W 140.80'
8. N 18°39'14" W 28.41'
9. S 63°03'39" W 120.72'
10. S 55°26'38" W 60.00'
11. N 34°33'32" W 36.00'
12. N 55°26'38" E 60.00'
13. N 48°04'14" E 140.32'
14. N 18°39'14" W 20.98'
15. N 18°39'14" W 122.07'

COORDINATES			
POINT		NORTH	EAST
1	TYPE D MON. 497.38' Rt. A, 3+06.50 P.O.T.	486,634.65	2,169,115.06
2	R/W MON. 74.69' Lt. A, 3+48.72 P.O.T.	486,196.81	2,168,744.53
3	TYPE D MON. 140.60' Rt. A, 8+95.80 P.O.T.	486,692.63	2,168,478.69
4	R/W MON. 261.73' Lt. A, 4+00.17 P.O.T.	486,075.81	2,168,592.94
5	R/W MON. 134.73' Lt. A, 4+40.51 P.O.T.	486,202.24	2,168,634.99
6	R/W MON. 104.71' Lt. A, 6+00.56 P.O.T.	486,320.63	2,168,523.21
7	R/W MON. 104.71' Lt. A, 7+35.58 P.O.T.	486,400.03	2,168,414.01
8	R/W MON. 144.75' Lt. A, 8+70.60 P.O.T.	486,447.04	2,168,281.27
9	R/W MON. 74.77' Lt. A, 9+70.59 P.O.T.	486,562.43	2,168,241.55
10	R/W MON. 67.52' Lt. A, 14+85.20 P.O.C.	486,878.33	2,167,831.56
11	R/W MON. 243.71' Lt. A, 4+40.22 P.O.T.	486,113.93	2,168,571.14
12	R/W MON. 64.92' Lt. A, 21+38.13 P.O.C.	487,299.05	2,167,330.07
13	R/W MON. 50.85' Lt. A, 26+38.76 P.O.T.	487,616.66	2,166,947.95
14	SURV. MON. #16-21, 21.88' Rt. A, 23+88.90 P.O.C.	487,523.98	2,167,190.57
15	SURV. MON. #16-20, 68.14' Rt. A, 9+21.99 P.O.T.	486,649.44	2,168,364.90
16	R/W MON. 74.63' Lt. A, 10+71.69 P.O.T.	486,622.00	2,168,159.88
17	R/W MON. 191.78' Lt. A, 3+48.70 P.O.T.	486,102.12	2,168,675.69

NOTE: 1850 RIVER 3 CHAINS IN WIDTH ACCORDING TO THE 1900 RETRACEMENT BY PLACER AND YUBA COUNTY SURVEYORS, PER THE YUBA COUNTY REPORT OF MAY 18, 1900

Approx. South Line 1850 Bear River

PLACER CO.

YUBA CO.

S 72°02'23" E 379.94'

S 72°02'23" E 355.02'

S 72°02'23" E 330.09'

N 18°27'37" E 125.18'

N 18°27'37" E 66.03'

N 18°27'37" E 198.04'

1962-1962 County Line N 37°57'37" E 427.74'

Original South Line of the Johnson Rancho N 53°27'37" E 424.50'

ORIGINAL 1856 JOHNSON RANCHO

002366 R

DR. NO. PLA. 199

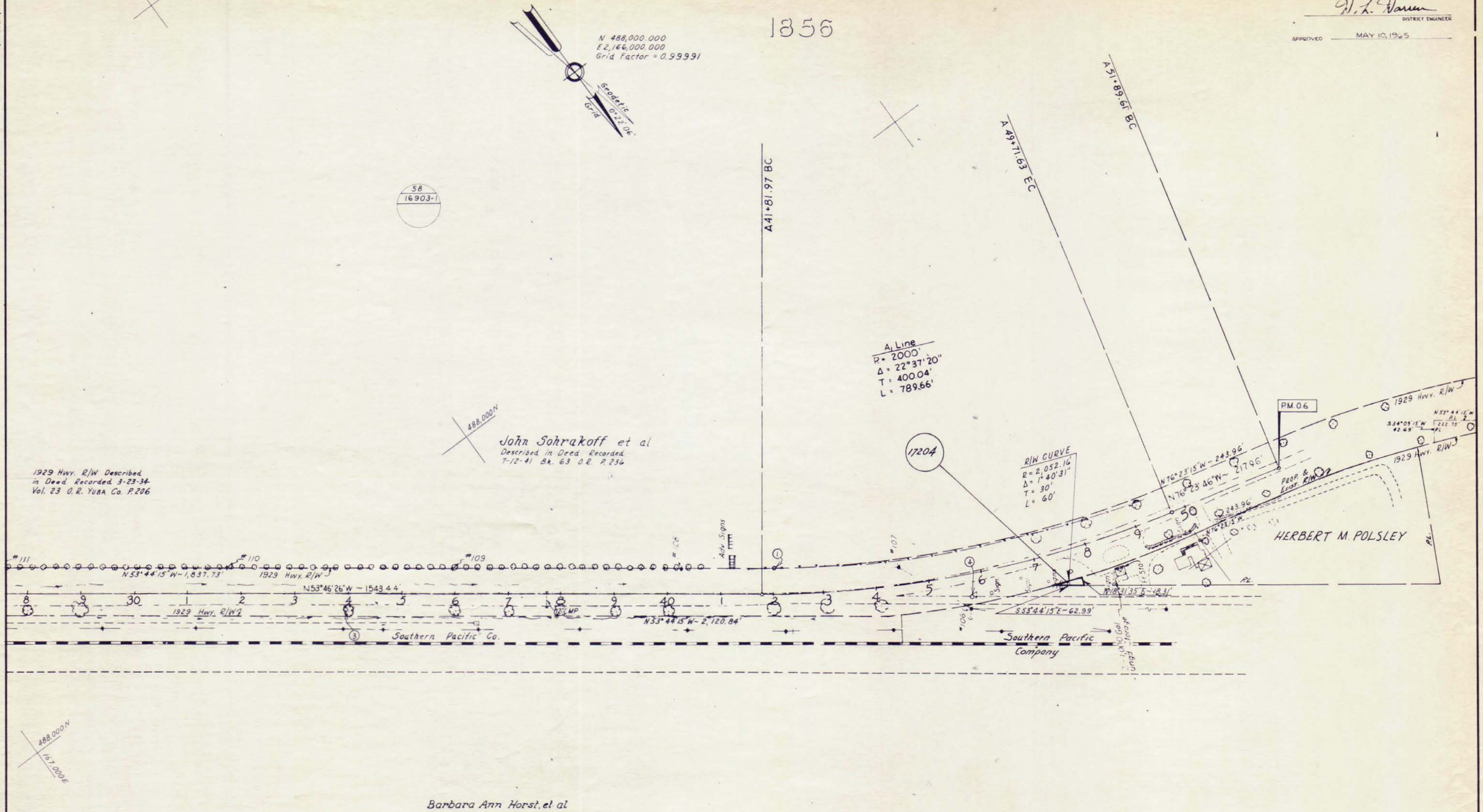
PLA 200

3 YUB 65 P.M. 0.6					
DIST	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
III	Yub	3	B.A.	5	5

W. L. Warren
DISTRICT ENGINEER

APPROVED MAY 10, 1965

JOHNSON RANCHO
1856



COORDINATES			
POINT		NORTH	EAST
(1)	R/W MON. 50.15' Lt. A, 42+08.81 P.O.C.	488,544.46	2,165,682.37
( )			
(3)	SURV. MON. #16-22, 22.47' Rt. A, 34+02.21 P.O.T.	488,126.93	2,166,375.47
(4)	SURV. MON. #16-23, 35.09' Rt. A, 45+76.34 P.O.C.	488,801.68	2,165,409.06

002367 R

DR. NO. PLA . 200

Appendix B

Heritage Oaks Estates East Project - Mitigated Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Heritage Oaks Estates East Project - Mitigated
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	2022.1.1.26

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	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
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	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	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
Consumer Products	29.0	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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)

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)
—	—	—	—	—

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 adjusted consistent with TIS prepared by TJKM. VMT adjusted pursuant to Mitigation Measure 4.2-1.

Heritage Oaks Estates East Project Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Heritage Oaks Estates East Project
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	2022.1.1.26

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	19.8	21.2	1.26	10.1	11.4	—	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	3.32	3.77	0.41	1.41	1.82	—	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	0.61	0.69	0.07	0.26	0.33	—	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	19.8	21.2	1.26	10.1	11.4	—	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	3.32	3.77	0.41	1.41	1.82	—	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	0.61	0.69	0.07	0.26	0.33	—	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.	61.0	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.	55.7	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.	56.4	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.	10.3	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	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	61.0	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	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	55.7	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	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	56.4	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	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	10.3	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
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—

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
Dust From Material Movement	—	—	—	—	—	—	1.08	1.08	—	0.55	0.55	—	—	—	—	—	—	—
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
Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.10	0.10	—	—	—	—	—	—	—
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
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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
Dust From Material Movement	—	—	—	—	—	—	2.02	2.02	—	0.80	0.80	—	—	—	—	—	—	—
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
Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.15	0.15	—	—	—	—	—	—	—
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	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-Roa 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-Roa d Equipm ent	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-Roa d Equipm ent	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-Roa d Equipm ent	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-Roa 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-Roa d Equipm ent	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-Roa d Equipm ent	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	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 Equipm	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 Equipm	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-Roa 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-Roa d Equipm ent	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-Roa d Equipm ent	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	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
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-Roa 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-Roa d Equipm ent	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-Roa d Equipm ent	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	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 Equipm	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 Equipm	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-Roa 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-Roa d Equipm ent	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-Roa d Equipm ent	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	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 Equipm	< 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	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	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	30.0	0.00	—
Grading	0.00	0.00	240	0.00	—
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	—
Operations: Vehicle Data	Trip rates and VMT adjusted consistent with TIS prepared by TJKM.

Appendix C

DRAFT REPORT | NOVEMBER 2023

HERITAGE OAKS ESTATES – EAST WATER SUPPLY ASSESSMENT

PREPARED FOR

LEWIS MANAGEMENT CORP.

PREPARED BY

Luhdorff & Scalmanini
Consulting Engineers

TABLE OF CONTENTS

TABLE OF CONTENTS

LIST OF TABLES

TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ADD	Average Day Demand
AFY	Acre-Feet per Year
AMSL	Above Mean Sea Level
BE	Bookman-Edmonston Engineering, Inc.
BGS	Below Ground Surface
BMO	Basin Management Objectives
CEQA	California Environmental Quality Act
COW	City of Wheatland
DWR	California Department of Water Resources
EIR	Environmental Impact Report
GMP	Groundwater Management Plan
GPM	Gallons Per Minute
HOE	Heritage Oaks Estates
IRWMP	Integrated Regional Water Management Plan
Lewis	Lewis Operating Corp.
LSCE	Luhdorff and Scalmanini Consulting Engineers
MDD	Maximum Day Demand
mg/L	Milligram per Liter
PHD	Peak Hour Demand
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SOI	Sphere of Influence
SYCGS	South Yuba County Groundwater Subbasin
ug/L	Microgram per Liter
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
YCWA	Yuba County Water Agency
WSA	Water Supply Assessment

1. Introduction

1.1. Purpose

Senate Bill (SB) 610, which was enacted in 2001 as Part 2.10 of Division 6 in the California Water Code, mandates that cities and counties engaged in significant development projects must complete a Water Supply Assessment (WSA).This WSA describes projected water demands resulting from the installation of a water production well/storage facility and subsequent availability of water to supply those demands during normal and dry years within a planned development spearheaded by Lewis Operating Corp. (Lewis). The City of Wheatland (COW), located in the South Yuba County Groundwater Subbasin (SYCGS), is the Lead Agency for the Project and has been identified as the public water system that will supply water for the development. COW has requested that Lewis, with the assistance of Luhdorff and Scalmanini Consulting Engineers (LSCE), prepare a WSA as required by SB 610. This WSA evaluates the water needs of the Heritage Oaks Estates (HOE) East development in relation to existing and future water supply and demands over the next 20 years.

Detailed information on historical and projected water requirements in the HOE East subdivision is summarized in this WSA. Based upon the information in the WSA and other studies, the COW will determine whether projected water supplies are sufficient to satisfy the demands of the development. The WSA will be included in the environmental documents prepared for the Project pursuant to the California Environmental Quality Act (CEQA). The WSA is also intended to establish a framework for future cooperative water resources management and land use planning efforts in future COW service areas.

1.2. Heritage Oaks Estates (HOE) East – North Park Production Well and Storage Facility

The installation of the North Park Well Pump and Storage Facility will be constructed to serve the HOE East development, located in Wheatland, California. This WSA includes updates to the water supply and demand assessment for the HOE East subdivision and the South Yuba County Groundwater Subbasin. The purpose of this WSA is to present an updated water demand assessment to COW for their approval. Development and phasing of the buildout of the HOE East subdivision are discussed below.

1.2.1. Development and Phasing

HOE East development is shown in the "Tentative Subdivision Map – TSTM 2023-0001 Heritage Oaks Estates – East" (dated November 2022), which includes the residential lots in Heritage Oaks planned by Lewis Operating Corp (**Appendix A**). Lewis has planned 685 single-family residential lots within Units 1-10 with landscaping applications included.

The staging of the storage facilities to be built will rely on the development phases, as outlined below.:

- *Phase 1* will encompass 234 residential lots and landscaping within Units 1, 2 and 3.
- *Phase 2* will encompass 220 residential lots and landscaping within Units 4, 5 and 6.
- *Phase 3* will encompass 231 residential lots and landscaping within Units 7, 8, 9 and 10.

The North Park Well and Storage Station will be designed to serve all three phases of the development. **Appendix B** contains the proposed Heritage Oaks Subdivision North Park Well and Storage Station Site Plan (2016). The site plan shows the location of the existing production and monitoring well, the pump building, booster pumps, station piping, storage tank, site piping, future storage tank and piping, and reserved space for future treatment equipment (filters and backwash tank) if they are ever needed for iron and/or manganese removal. Note that the groundwater quality from the existing well was tested in 2006 and was non-detect for iron and manganese (as was the monitoring well), and treatment is not expected to be needed (LSCE, 2012).

1.3. Scope of Analysis

This WSA includes a review of COW's water supplies and existing and future planned development within HOE East through the year 2043. The WSA is based upon and intended to fulfill the requirements of SB 610 described below.

1.3.1. Senate Bill (SB) 610 Requirements for Groundwater Sources

SB 610 became effective January 1, 2002. The stated intent of SB 610 is to strengthen the process by which local agencies determine the adequacy and sufficiency of current and future water supplies to meet current and future demands. SB 610 amended the California Public Resources Code to incorporate Water Code findings within the California Environmental Quality Act (CEQA) process for certain types of projects. SB 610 amended the Water Code to broaden the types of information included in Urban Water Management Plans (UWMPs) – (Water Code section 10620 et. seq.) and to add Water Code section 10910 Water Supply Planning to Support Existing and Planned Future Uses (section 10910 et. seq.). Part 10912 clarifies the roles and responsibilities of the Lead Agency under CEQA and the public water system (water supplier) with respect to comparing current and future water supplies with current and projected future water demands.

1.3.1.1. Water Code Section 10912

Water Code Part 10912 defines "Projects" that are subject to a WSA and the water supplier's responsibilities related to the WSA. A WSA is required for (1) a proposed residential development of more than 500 dwelling units; (2) a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space; (3) a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space; (4) a proposed hotel or motel, or both, having more than 500 rooms; (5) a proposed 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; (6) a mixed-use development that includes one or more of the uses described above; (7) a development that would demand an amount of water equivalent to or greater than the amount of water required by a 500-dwelling-unit project; and (8) for water suppliers with under 5,000 water service connections, any new development that will increase the number of water service connections in the service area by ten percent or more.

If the water supplier has completed a UWMP, it must identify whether the new demands are included in the UWMP. If the UWMP includes the demands, it may be incorporated by reference. In this case, the water supplier is COW, and there is no UWMP; therefore, Water Code section 10910 requires the preparation of a WSA. To comply with the SB 610 requirements, this WSA includes the following information:

- A description of the water service area, including climate, current and projected population, and other demographic factors that affect water management planning. Demographic data are presented in five-year increments for the period 2020 to 2035.
- A description and quantification of the existing and planned water source (groundwater).
- A description of the water source availability during normal, single-dry, and multiple dry water year types.
- A description of current and projected water demands among all user classes in the future public water system service area in five-year increments.
- A discussion of the total projected water supplies determined to be available to the public water system during normal, single-dry, and multiple-dry water years for a 20-year horizon that will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses.

1.3.1.2. WSA Requirements When Groundwater is a Source

Groundwater is planned to serve as the sole source of supply to the proposed HOE East via the North Park Well and Storage Station Project. Water supply facilities will be operated and maintained by COW. Accordingly, where groundwater is the source of supply, the WSA is to include, among other information such as documentation of the projected water demands for the Project, the following additional information:

- A review of any information contained in a UWMP relevant to the identified water supply for the proposed project. Since COW has not prepared a UWMP, a guidance document provided by the California Department of Water Resources (DWR) suggests that the WSA include a discussion of any existing groundwater management plan and how it would affect the water supplier's use of the basin (DWR, 2003a).
- A description of any groundwater basin from which the proposed project would be supplied with groundwater, including information obtained from the most current DWR bulletin that characterizes the condition of the groundwater basin (i.e., whether DWR has identified the basin as overdrafted or projected that the basin will become overdrafted if present management conditions continue, and what measures are being taken to prevent overdraft conditions from occurring). As suggested in the DWR guidance document relating to the implementation of SB 610, if the basin has not been (or recently been) evaluated by DWR, data that indicate historical and recent groundwater level trends should be evaluated.
- A detailed description and analysis of the amount and location of groundwater pumped by the public water system for the past five years from any groundwater basin from which the proposed project will be supplied.

- A detailed description and analysis of the amount and location of groundwater that is projected to be pumped (for at least a 20-year horizon) by the public water system from any basin from which the proposed project will be supplied.
- An analysis of the sufficiency of the groundwater that will be supplied from the basin or basins to meet the projected water demand of the proposed project.

1.4. Definition of Terms

1.4.1. Sufficiency

Water Code section 10910(f)(5) specifies "an analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project." A "sufficient water supply" is defined in Government Code 66473.7 (a)(2) as follows:

> "'Sufficient water supply' means the total water supplies available during the normal, single-dry, and multiple-dry years within a 20-year projection that will meet the projected demand associated with the proposed subdivisions, in addition to existing and planned future uses, including, but not limited to, agricultural and industrial uses…."

The public water system is as defined in Water Code section 10912. The written verification prepared under Section 66473.7(g) is to include:

> "[A] description, to the extent that data is reasonably available based on published records maintained by federal and state agencies, and public records of local agencies, of the reasonably foreseeable impacts of the proposed subdivision on the availability of water resources for agricultural and industrial uses within the public water system's service area (emphasis added) that are not currently receiving water from the public water system but are utilizing the same sources of water. To the extent that those reasonably foreseeable impacts have previously been evaluated in a document prepared pursuant to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) or the National Environmental Policy Act (Public Law 91-190) for the proposed subdivision, the public water system may utilize that information in preparing the written verification."

The above Government and Water Codes (Gov. Code Section 66473.7 and Water Code 10910 et seq.) are understood to mean that the analysis of the sufficiency of groundwater from the basin applies to the availability of water supplies to meet the projected water demands during normal and multiple-dry years within a 20-year projection. The area from which groundwater will be withdrawn to meet the projected demands for the Project and other public, agricultural, and industrial uses is the future COW public water system service area that overlies a portion of the South Yuba County Subbasin of the Sacramento Valley Groundwater Basin. The future COW public water system service area, or Sphere of Influence (SOI), is the area used for the analysis of supply sufficiency. Historical and current groundwater conditions in the South Yuba County Groundwater Subbasin were also evaluated and considered as part of this analysis.

1.4.2. Overdraft

The SB 610 requirements discussed above include evaluation of the condition of the groundwater basin, including whether DWR has identified the basin to be in overdraft or projected to become overdrafted. The word "overdraft" is defined in Bulletin 118 as follows (DWR, 2003b):

> "[T]he condition of a groundwater basin or subbasin in which the amount of water withdrawn by pumping exceeds the amount of water that recharges the basin over a period of years, during which the water supply conditions approximate average conditions (DWR, 1998)."

Bulletin 118 also states, "overdraft can be characterized by groundwater levels that decline over a period of years and never fully recover, even in wet years. Water level declines without full recovery to historically high-water levels do not represent overdraft. Groundwater levels can stabilize at a lower level such that the lowered levels are not exhibiting chronic decline or leading to groundwater depletion. Further, lowered groundwater levels are often necessary to create storage capacity and increase the yield of a basin. If overdraft is determined and continues for a number of years, "significant adverse impacts may occur, including increased extraction costs, costs of well deepening or replacement, land subsidence, water quality degradation, and environmental impacts" (DWR, 2003b).

1.5. Water Management Plans and Other Studies

1.5.1. Water Management Plans

COW does not have a groundwater management plan, but the COW service area is included in the Yuba County Regional Water Management Plan (Yuba County, 2018), adopted in June 2018. It encompasses the entirety of Yuba County, which includes North Yuba and South Yuba County Groundwater Subbasins. The plan addresses seven general Basin Management Objectives (BMOs) intended to protect the County's groundwater supply. It also includes a number of Groundwater Management Plan (GMP) components designed to accomplish the BMOs. Groundwater monitoring is a major GMP component, and monitoring of groundwater levels and quality is included in the summary of regional monitoring. The report also contains groundwater demand and supply estimates that are used in this WSA.

1.5.2. Other Studies

In addition to the water management plans, a number of other studies containing information about geology, hydrogeology and groundwater conditions in the South Yuba County Groundwater Subbasin were reviewed and utilized for preparation of this WSA. This included an unpublished study entitled *Ground Water Resources and Management in Yuba County* prepared for the Yuba County Water Agency (YCWA) by Bookman-Edmonston Engineering, Inc. (BE) in 1992.

Two groundwater model reports were reviewed for this WSA. These included a draft report prepared by DWR (1998) to summarize the development, calibration, and results of a groundwater flow model of the North and South Yuba County Groundwater Subbasins. This model was calibrated for a 28-year period (1968 through 1995) using water level data from 63 wells. Aquifer properties used in the DWR model are discussed in Chapter 3. A report on a groundwater flow model developed by CH2M Hill (2003) for the Yuba Highlands Specific Plan Environmental Impact Report (EIR) was also reviewed.

1.6. Report Organization

This report is structured to facilitate the presentation of information required by Water Code 10910(f)(5) and Government Code 66473.7 (a)(2) including the analyses necessary to evaluate the sufficiency of the water supply to meet projected future demands.

Chapter 1 provides an overview of the legal requirements for the WSA - describing the HOE East development, located in the COW in the South-Central portion of the SYCGS. It provides definitions of key terms, describes water resources management plans that include the COW service area, and describes local and regional studies pertinent to this WSA.

Chapter 2 describes the current and future COW water service areas (including the HOE East development), and includes a summary of projected population growth, climate, and current land use. The hydrogeology of the groundwater basin, including geology, well yields, and aquifer characteristics is also discussed.

Chapter 3 describes regional and local groundwater conditions, including historical and current groundwater level data in the COW service area. A summary of current COW water facilities and available groundwater quality data for COW wells is also included.

Chapter 4 describes current and future water demands based on planned growth in the future COW service area, specifically the HOE East development that triggered the preparation of this WSA. An overview of the overall supply sufficiency in normal, wet, and dry years by comparing projected groundwater demands in HOE East to available supplies is discussed.

2. CITY OF WHEATLAND SERVICE AREA

The urbanized portion of the COW spans approximately 1.5 square miles. COW relies primarily on groundwater from six production wells located within the COW boundaries. Today, COW provides fire protection, water, sewer, and parks and recreation services to the current service area.

2.1. Service Area Characteristics

Future COW service area boundaries represent land use that is designated as Low Density Residential and Urban Reserve. Within the City limits, current service areas are designated as either residential or commercial, with sub-categories depending on estimated population (**Figure 1**). The following are proposed developments in and around the COW that aim to occupy either Low Density Residential and/or Urban Reserve service areas in the future:

2.1.1. Johnson Rancho/Hop Farm

Johnson Rancho/Hop Farm is approximately 4,150 acres, annexed in 2014, and has the capacity for 13,300 single-family housing units, 556 multi-family units, 500 dwelling units within non-residential lands uses, 574 acres zoned for commercial, employment, schools, civic center and parks. Also includes two distinct commercial units.

2.1.2. Caliterra Ranch (formerly known as Jones Ranch)

Caliterra Ranch is 191 acres with the capacity for 552 single-family units. It has 19 acres zoned for commercial development, parks and public areas.

2.1.3. Heritage Oaks Estates – West

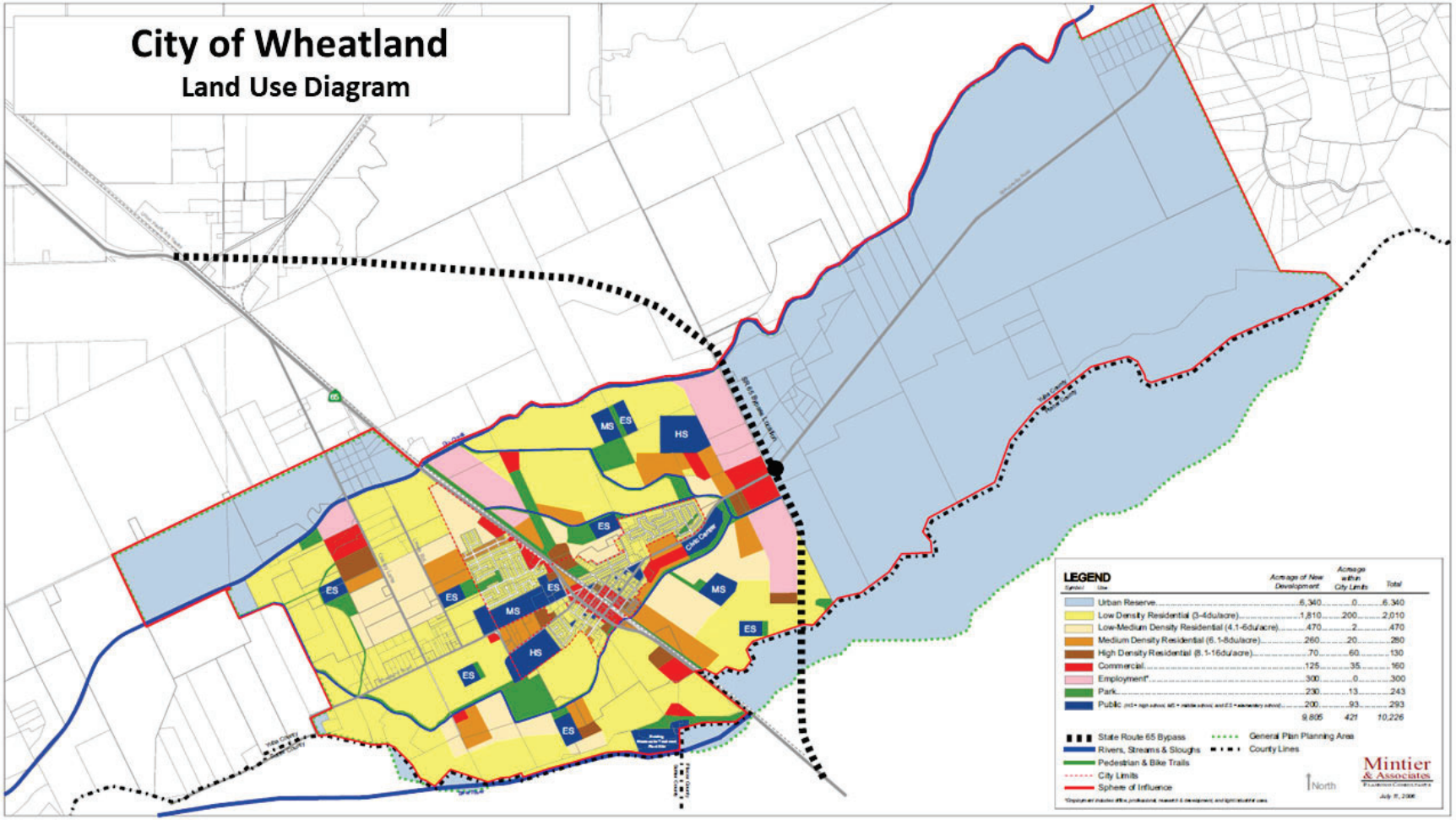
Heritage Oaks Estates – West is 58 acres and is zoned for 170 single-family units.

2.1.4. Nichols Grove

Nichols Grove is 485 acres with 11.5 acres for mixed use commercial and is zoned for up to 1,624 single-family units, 91 multi-family units and 117.2 acres of park/open space.

2.1.5. Rodden Ranch

Rodden Ranch is 98 acres and zoned for 37 single-family units.



Source: Minter and Associates, 2006

Figure 1. City of Wheatland Land Uses

2.1.6. Heritage Oaks Estates – East

HOE – East encompasses 114.34 acres and can accommodate 685 lots, with 35.62 acres allocated for detention/park areas, water well sites, parks, paseos, levee right of ways, and open spaces. The subdivision map features a Production Well and Storage Facility located to the north of the subdivision, intended to provide water for the development's residents. The primary aim of this WSA is to evaluate the water demand for this area, considering the well's production capacity. Specifically, it will determine whether extracting groundwater at a rate of 1,000 gallons per minute (gpm) to serve an additional 685 residential units will surpass the current capacity of the COW water source.

2.2. Current and Projected Service Area Population

The incorporated COW had a population of 3,712 and 1,360 total housing units in 2020 (U.S. Census Bureau). The projected number of dwelling units at completion multiplied by an average number of people per connection was used to estimate the population of the expanded COW service area. Based on an average of 2.73 people per connection, this would result in an estimated total population of about 1,870 persons for the 685 units.

2.3. Climate and Precipitation

The “Mediterranean” type climate in the COW is characterized by mild wet winters and hot, dry summers. The City of Olivehurst, approximately 10 miles northwest of the COW, reports that the average high temperature in January is 54 degrees and the average high July temperature is 96.3 degrees (Planwest Partners, Inc, 2005). Precipitation provides water to the area’s surface water supply and also recharges the groundwater supply. The average annual precipitation is about 22 inches (Planwest Partners, Inc, 2005) and ranges from about 18 inches along the Feather River in the western portion of the South Yuba County Groundwater Subbasin up to 25 inches along the eastern boundary of the subbasin (BE, 1992).

Annual precipitation data from the Marysville gauge (approx. 13 miles north of Wheatland) are plotted on **Figure 2**. This precipitation gauge is located at an elevation of about 57 feet above mean seal level (Amsl) and has a long period of record (1897 to the present). The lowest annual rainfall during the period of 2001 to 2023 was 6.55 inches during the 2020 calendar year (Jan 1, 2020, to December 31, 2020), and the highest annual rainfall was 28.98 inches during the 2019 calendar year. The mean annual precipitation at this gauge is 18.1 inches.

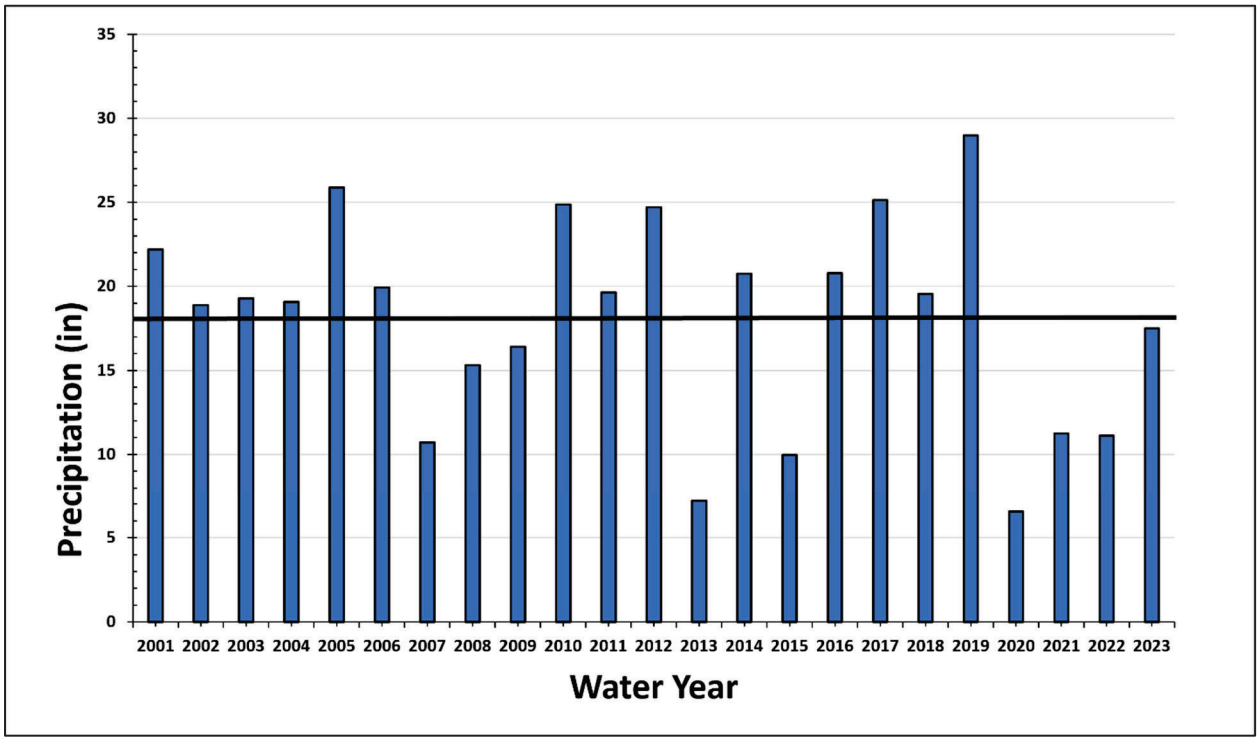


Figure 2. Annual Total Precipitation Data from the Marysville Gauge for the Water Years 2001-2023.

2.4. City of Wheatland Land Use

The COW encompasses approximately 1.5 square miles, with the majority of that land designated for urban use (residential and commercial). However, Wheatland's Sphere of Influence (SOI) has specified land outside the city limits as Urban reserve, or land planned for future development (**Figure 1**). According to the General Plan Policy (Minter and Associates, 2006) there are ten land use designations for the COW. The HOE East, the site for the proposed new production water well installation, is located on the south side of town, adjacent to Hwy 65, on land currently designated for Low Density Residential use.

2.5. Hydrogeology of the Groundwater Basin

2.5.1. Groundwater Basin and Subbasin Descriptions

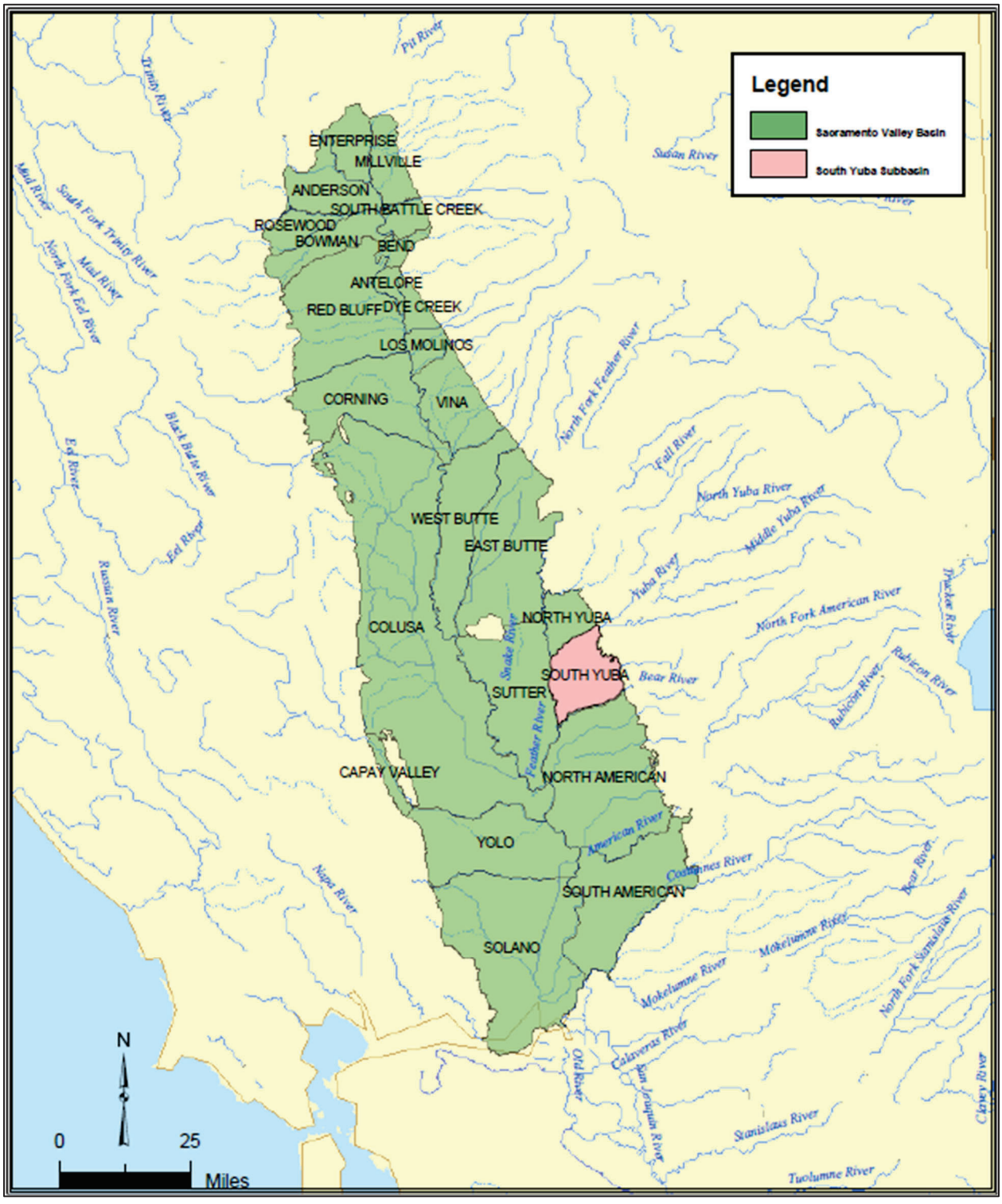
The current and future COW service areas are located in the South Yuba County Groundwater Subbasin of the Sacramento Valley Groundwater Basin (DWR Basin number 5-21). This groundwater basin is the second largest in California and includes a total of 18 subbasins. The Sacramento Valley consists of a large northwest-trending, elongated, asymmetric structural trough that extends 150 miles north from the Sacramento-San Joaquin Delta to the City of Red Bluff. The Valley is dominated by sedimentary water-bearing deposits that are thickest west of the Valley axis. These deposits thin in the eastern portion of the Valley where they overlie the crystalline rocks of the Sierra Nevada basement complex.

The South Yuba County Groundwater Subbasin (Subbasin Number 5-21.61) is located along the eastern edge of the Sacramento River Valley (**Figure 3**) and is described in the online version of DWR's Bulletin 118 update (DWR, 2006). The subbasin encompasses about 107,000 acres based on DWR (2006); BE (1992) had previously used an area of 88,700 acres based on an earlier interpretation of the subbasin boundaries. The subbasin is bounded on the east by the Sierra Nevada, on the west by the Feather River, on the north by the Yuba River, and on the south by the Bear River. Prior to development, groundwater flowed to the west and southwest from the Sierra Nevada toward the Feather River. Water bearing alluvial deposits ranges in thickness from less than 300 feet near the Sierra Nevada in the east to approximately 1,000 feet along the Feather River in the west. Three geologic units provide the majority of water to wells: the Mehrten Formation, the Laguna Formation, and the overlying and more productive Older Alluvium deposits. Most domestic wells pump from the shallower Older Alluvium (100 to 150 feet bgs), while irrigation and public supply wells tend to be deeper and may pump from both deposits for additional well yield.

2.5.2. Geology of the South Yuba County Groundwater Subbasin

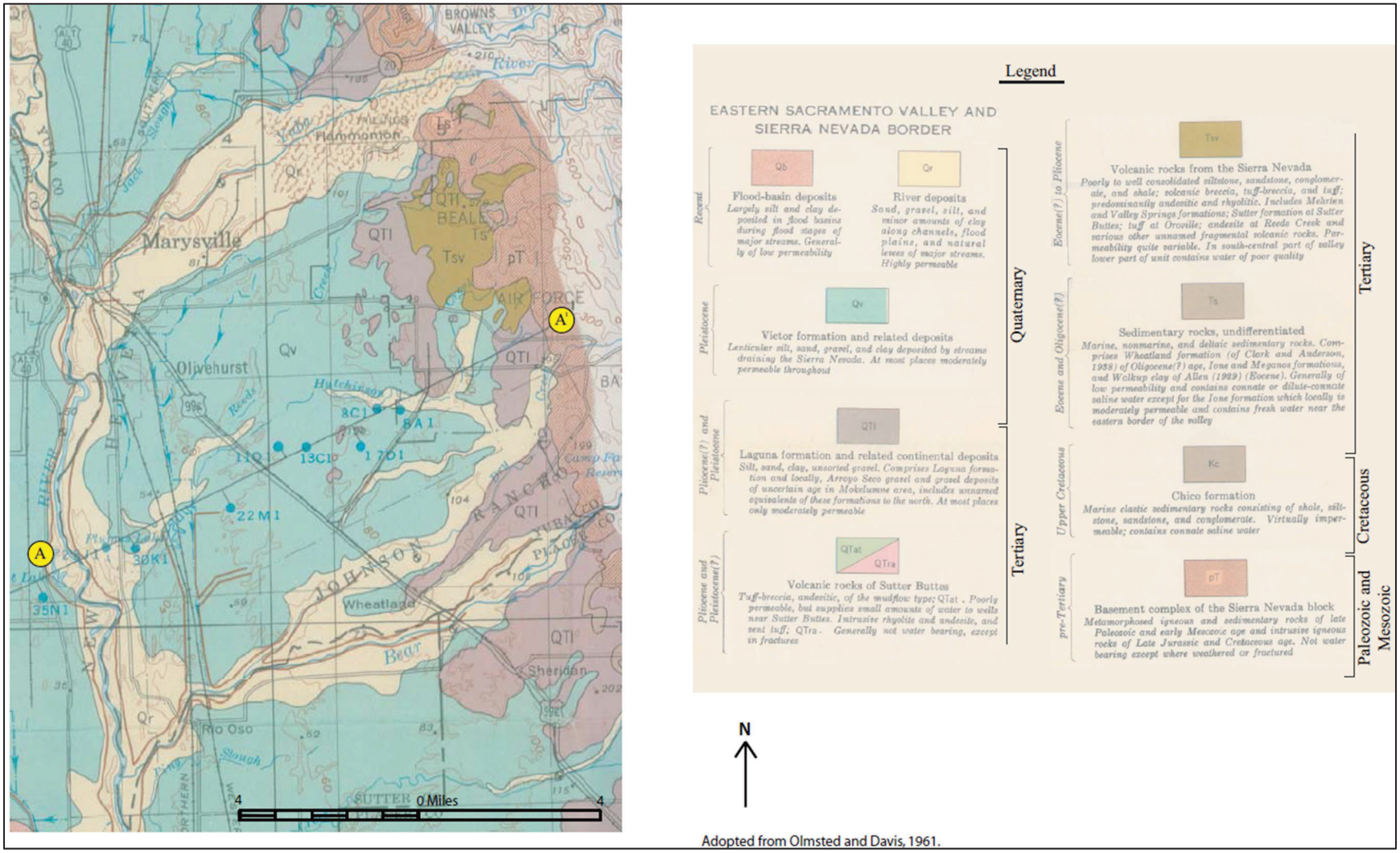
The South Yuba County Groundwater Subbasin is bounded to the east by the relatively impermeable Sierra Nevada complex. These rocks extend beneath the subbasin and are overlain by younger consolidated and unconsolidated rocks at a gradually increasing depth toward the Feather River and beyond to the Sacramento Valley trough. The resulting wedge-shaped body of stratified alluvial deposits dips gently to the west and stores fresh groundwater to depths of up to 1,000 feet in the west and less than 300 feet in the east (BE, 1992). Saline groundwater may exist in consolidated rocks beneath the alluvial deposits.

As indicated above, the Mehrten Formation, the Laguna Formation, and the overlying Older Alluvium are the principal water-bearing formations in the South Yuba County Groundwater Subbasin. These formations are described below in order from oldest to youngest. Several geologic and hydrogeologic studies have been conducted in the area, including Bryan (1923), Olmsted and Davis (1961), DWR (1978), and BE (1992), and the South Yuba County Groundwater Subbasin Groundwater Sustainability Plan (SYSGSP, 2021). **Figure 4** is a geologic map of the South Yuba County Groundwater Subbasin, adopted from Olmsted and Davis (1961).



Source: Adopted from LSCE, 2007

Figure 3. South Yuba County Groundwater Subbasin with the Sacramento Valley Basin



Source: Adopted from LSCE, 2007

Figure 4. Geologic Map of the South Yuba County Groundwater Subbasin

The geologic structure of the South Yuba County Groundwater Subbasin is relatively simple, with no faults or folds identified on the regional geologic map. The Sutter Buttes, located just west of Yuba County consists of an intrusive volcanic plug, which caused the uplift and faulting of older marine sediments in the central portion of the Sacramento Valley. This intrusion may have resulted in slightly uplifted marine-deposited sediments in the vicinity of Marysville, but the magnitude of the deformation is minor. The principal geologic units that underlie the subbasin are summarized below.

Sierra Nevada Bedrock: Metamorphic and igneous granitic rocks dominate the bedrock that forms the eastern boundary of the groundwater basin. Where exposed in the foothills, this sequence of rocks can supply small quantities of water from weathered and fractured zones. Metamorphic rocks contain volcanics with high manganese and iron content.

Eocene and Cretaceous Rocks: Cretaceous marine deposits that overlie the bedrock in most of the subbasin originally contained saline, connate water. Most of the saline water has been flushed out toward the valley trough (BE, 1992), but water quality is still poorer in the marine deposits. The marine deposits are overlain by Eocene non-marine deposits, including the Ione Formation, which also has poorer water quality than overlying formations.

Mehrten Formation: This Tertiary volcanic rock sequence is dominated by alluvial, andesitic sand and gravel intervals interbedded with clay and silt. These rocks include conglomerate, sandstone, and tuff-breccia of mud flow origin that extend westward from their exposure in the vicinity of Beale Air Force Base. Sand and gravel lenses in the Mehrten are highly permeable and tapped by wells throughout the Sacramento Valley.

Laguna Formation: This Pliocene formation is the thickest and most extensive water-bearing unit in the South Yuba County Groundwater Subbasin. It is exposed along the foothills from Oroville south to Stockton and intermittently in the eastern portion of the Sacramento Valley. Detritus from the weathered Sierras were transported into the Valley by slow-flowing streams and deposited on low sloping broad alluvial fans, concentrating coarser grained materials in river and stream channels and depositing finer-grained materials laterally. This heterogeneous formation contains silt to sandy silt with abundant clay and minor lenticular gravel beds. The sand and gravel layers are thin, discontinuous, compact, and commonly cemented with calcium carbonate, reducing their overall permeability. Considerable amounts of coarse materials occur in the vicinity of the Yuba River at depths of 150 to 600 feet but decrease north and south of the river. The thickness of the Laguna Formation is highly variable, from 400 feet near the Yuba River to up to 1,000 feet in the southwest portion of Yuba County (BE, 1992).

Older Alluvium and Victor Formation: In the early Pleistocene, uplift of the Sierra Nevada block resulted in increased erosive power and transport capacity of rivers and streams draining to the west. This higher-energy alluvial system increased the proportion of sand and gravel deposited in lenticular beds along with lesser amounts of silt and clay. The Older Alluvium unit is exposed over much of the South Yuba County Groundwater Subbasin with varying thicknesses from less than 100 feet to over 150 feet atop the highly eroded surface of the Laguna Formation. Gravels are located at shallower depths and are thickest near the foothills and the Yuba River. These deposits provide overall moderate permeability, with increased permeability in sand and gravel lenses and reduced permeability where hardpan soils have developed. As shown on **Figure 4**, these deposits are identified as “Victor Formation and related deposits”.

Older Floodplain Deposits: Along the Feather River and its tributaries, gravelly sand, silt, and clay was deposited from flood events during the Pleistocene. The thickness of this unit ranges from 5 to 15 feet. Its moderate permeability allows for infiltration of precipitation and irrigation water to the water table unless prevented by buried hardpan soils at its lower contact with the Older Alluvium. Recent Stream Channel and Floodplain Deposits: These Holocene age alluvial deposits are found along Honcut Creek and the Yuba, Bear, and Feather Rivers. Dominated by coarse sand and gravels, these highly permeable deposits have a thickness of up to 110 feet. Grain size and thickness decreases as the distance from streams increases. This unit also occurs as abandoned overflow channels two to five miles south of the Yuba River. The greatest volume of these deposits is found along the channel of the Yuba River and is about 3.5 miles wide. The coarse-grained and highly permeable nature of these deposits allows for significant groundwater recharge, and the unit can yield large quantities of water to shallow wells.

Dredge Tailings: Tailings from hydraulic mining completely obscured the original channel of the Yuba River during the 1870s and 1880s. Several thousands of acres of the Yuba River floodplain upstream of Marysville were excavated by gold dredges, and parallel ridges of coarse gravel characterize the resulting topography. Piles of coarse gravel and cobbles up to 125 feet thick can be located in the upper reaches of the Yuba and Bear Rivers.

2.6. Well Yields and Aquifer Characteristics

Aquifer characteristics refer to the ability of aquifers to transmit and store groundwater. Calculations based on data from long-term, constant rate pumping tests are the preferred method for estimating aquifer characteristics. However, other methods can be used when aquifer test data are limited, as is the case in the South Yuba County Groundwater Subbasin. Available aquifer test data are summarized below along with aquifer properties used by DWR (1998) and Woodard Curran (SYGSP, 2019) for development of the groundwater flow model of the North and South Yuba County Groundwater Subbasins.

The purpose of the DWR groundwater model was to better understand the effect of proposed water transfers on groundwater conditions and stream-aquifer interactions. The model developed and described in the SYSGSP (2019) utilized four layers to simulate the groundwater system. Layer 1 of the model was used to represent the upper zone of the aquifer system, which varies in thickness from 15-60 ft along the western and southern boundaries of the subbasin. Layer 2 represented the second mid-upper zone, which has a maximum thickness of 250 feet in the western portion of the subbasin and gradually thins to the east. Layer 3 represents the mid-lower zone, with a maximum thickness of 685 along the northwestern portion of the subbasin that gradually thins to the east. Layer 4 represents the lower zone with a maximum thickness of 500 feet in the southwestern portion of the subbasin that gradually thins to the east.

2.6.1. Well Yields

Well yields and aquifer characteristics in Yuba County were summarized by BE (1992). A review of drillers' logs indicated that wells in the South Yuba County Groundwater Subbasin range in depth from a few hundred to over 700 feet. Most existing wells are less than 300 feet deep, and the majority of the well yield is derived from the Older Alluvium, which is much more permeable than the underlying Laguna and Mehrten Formations. Well yields in the subbasin typically range from 1,000 to 3,000 gpm, with an average

of 1,650 gpm. Wells in the western and northern portions of the subbasin near the Feather and Yuba River had the highest yields (1,500 to 3,000 gpm), and wells in the southern and eastern portions of the subbasin generally had lower yields (1,000 to 1,500 gpm).

The yields for the six COW wells and North Park Well in HOE East are provided in **Table 1**. The yields were measured at the time the wells were drilled and may not reflect the current capacities of the wells. The reported yields range from 1,170 to 2,640 gpm, with an average of about 1,900 gpm.

2.6.2. Specific Capacity

Specific capacity is the ratio of well yield to drawdown and provides a measure of productivity for both the aquifer and the well. Specific capacity is calculated as Q/s, where "Q" is the yield of the well in gpm and "s" is the drawdown in feet. The BE (1992) report contains a summary of specific capacity in the South Yuba County Groundwater Subbasin based on drillers' logs and Pacific Gas & Electric (PG&E) pump efficiency tests. Specific capacities based on pump tests conducted immediately after wells are drilled tend to be lower because permanent pumps have not been installed and the wells may not be fully developed. Based on drillers' reports, BE (1992) reported that specific capacities in the South Yuba County Groundwater Subbasin range from 16 to 65 gpm/ft, with an average of 40 gpm/ft. Specific capacities calculated from PG&E tests in the subbasin ranged from 18 to 95 gpm/ft, with an average of 55 gpm/ft.

The specific capacities for the six COW wells and North Park Well in HOE East are provided in **Table 1**.

2.6.3. Transmissivity and Hydraulic Conductivity

The ability of an aquifer to transmit water is measured by the transmissivity, which can be defined as the hydraulic conductivity (permeability) times the saturated thickness. The U.S. Geological Survey (USGS) estimated transmissivity in the central portion of the South Yuba County Groundwater Subbasin to be about 35,000 feet squared per day (ft^2/day) (Bloyd, 1978). Transmissivity estimates were higher (52,000 ft^2/day) along the Feather River due to the presence of over 100 feet of highly permeable stream channel sediments. Transmissivity estimates were lower (8,700 ft^2/day) for the southeastern portion of the subbasin because aquifer materials are thinner and are comprised primarily of the less permeable Laguna Formation.

Transmissivity and horizontal hydraulic conductivity estimates for the six COW wells and the North Park Well were not available at the time of this report.

Estimates of vertical hydraulic conductivity in the South Yuba County Groundwater Subbasin are only available from the DWR (1998) and CH2M Hill (2003) groundwater model reports. DWR estimated the vertical hydraulic conductivity of the confining layer between the upper and lower zones of the aquifer to be 0.02 ft/day. CH2M Hill used a value of 1.25 ft/day based on aquifer tests conducted in the Yuba Goldfields area. Estimates of vertical hydraulic conductivity at all six COW wells and the North Park Well in HOE East were not available at the time of this report.

2.6.4. Storage Coefficient

The ability of an aquifer to store groundwater is measured by the storage coefficient, which is defined as the volume of water that is released from or added to storage per unit surface area and per unit change in hydraulic head. For unconfined aquifers, a change in head means a change in the elevation of the water table, and the storage coefficient is called the specific yield. Specific yields of common aquifer materials range from 3% for clay to 20% for unconsolidated sand or sand and gravel (Olmsted and Davis, 1961).

BE (1992) estimated the specific yield of the South Yuba County Groundwater Subbasin to range from 8% for the shallowest zone (20-50 feet bgs) to 6.2% for the 100 to 200-foot depth zone, with an average of 6.8% for the upper 200 feet of the aquifer system. BE (1992) also estimated the specific yield of the underlying Laguna Formation to be 4 to 5%.

In confined aquifers, storage coefficients are much smaller, and accurate estimates are only possible based on aquifer tests in which drawdown is measured in an observation well located at some distance from the pumped well. Storage coefficients at all six COW wells and the North Park Well in HOE East were not available at the time of this report.

2.6.5. Groundwater Storage

The amount of groundwater in storage in the South Yuba County Groundwater Subbasin was estimated from specific yield by BE (1992) and CH2M Hill (2003). Both estimates used an area of 88,700 acres based on an earlier interpretation of the subbasin boundaries. BE estimated the volume of groundwater in storage in the upper portion of the aquifer system (above 200 feet bgs) of the South Yuba County Groundwater Subbasin to be 1,090,000 ac-ft based on a saturated thickness of 180 feet and a specific yield of 6.8%. CH2M Hill (2003) made a similar estimate for the entire freshwater portion of the aquifer system using an average thickness of 500 feet. Groundwater storage in the combined upper and lower zones were estimated to be 2,740,000 ac-ft based on these parameters. If the current area of the subbasin (107,000 acres) had been used for this calculation, the estimated groundwater storage would be about 3,300,000 ac-ft.

These groundwater storage estimates show that the total volume of groundwater storage in the subbasin is very large, but do not indicate what portion of this storage can safely be extracted (the safe yield) to meet water demands in the subbasin. The volume of groundwater extraction cannot exceed the rate of groundwater recharge over a period of years without causing a depletion of aquifer storage.

3. REGIONAL AND LOCAL GROUNDWATER CONDITIONS

3.1. Historical and Current Groundwater Levels

The Yuba County Water Agency (YCWA) Groundwater Management Plan reports that DWR and YCWA currently monitor groundwater levels in 74 wells in Yuba County and 50 of these wells are located in the South Yuba County Groundwater Subbasin (YCWA, 2005). Twelve of the 50 wells in the subbasin are monitored by YCWA and the other 38 by DWR. Monthly monitoring is conducted in 19 of the 50 wells; 31 wells are monitored semi-annually (spring and fall). In addition, three wells are located in the South Yuba

County Groundwater Subbasin (YCWA, 2005). Twelve of the 50 wells in the subbasin are monitored by YCWA and the other 38 by DWR. Monthly monitoring is conducted in 19 of the 50 wells; 31wells are monitored semi-annually (spring and fall). In addition, three municipalities in the subbasin measure water levels in their wells on at least a monthly basis, including Olivehurst Public Utility District, Linda County Water District, and the COW (YCWA, 2005).

Since completion of the Groundwater Management Plan (GMP), YCWA, DWR and others have constructed dedicated monitoring wells at ten sites located in or adjacent to the South Yuba County Groundwater Subbasin. Five of these sites include multiple wells completed to different depths. YCWA constructed monitoring wells at six sites, including one site with multiple completions, and these monitoring wells will be added to the existing YCWA monitoring program.

DWR has recently constructed three multiple completion monitoring wells at sites in or near the South Yuba County Groundwater Subbasin. One site located just south of the Yuba River contains five monitoring wells with screened intervals of 20-40, 70-80, 250-260, 430-450, and 600-620 feet bgs. A second site containing a multiple completion monitoring well is located west of the Feather River about six miles south of Yuba City. The third site is located just north of the Bear River near Wheatland in the subbasin and contains four monitoring wells with screened intervals of 28-48, 78-97, 215-244, and 320-330 feet bgs. The monitoring wells at these sites will be added to the DWR monitoring program.

Ten new monitoring sites (half of which include multiple completions) have been constructed since the YCWA GMP was published, and these will be added to the YCWA and DWR monitoring programs. As new municipal water supply wells are constructed and added to COW's water system (including the Heritage Oaks East well), these wells will be added to COW's monthly monitoring program. The expanded groundwater monitoring network that includes wells monitored by YCWA and DWR, along with COW and other municipalities will allow more detailed analysis of groundwater conditions in the South Yuba County Groundwater Subbasin in the future, including stream-aquifer interactions and water level responses to pumpage in all zones of the aquifer system.

3.2. Evaluation of Groundwater Levels in the South Yuba County Groundwater Subbasin

Reports such as BE (1992) and the GMP prepared by YCWA (2005) have described groundwater level declines that occurred prior to 1983 as indicative of overdraft. The GMP notes that YCWA's surface water deliveries to the subbasin reversed "a potentially serious overdraft situation that existed in the south Yuba basin" (YCWA, 2005). DWR's description of the South Yuba County Groundwater Subbasin in the online supplement to Bulletin 118 was last updated on January 20, 2006. DWR's summary of groundwater levels focuses on the cone of depression that dominated groundwater conditions in the subbasin until recently and caused increased seepage from the three rivers that border the subbasin. DWR notes that groundwater levels have been increasing since 1984, and "[c]urrent DWR records indicated groundwater levels continue to increase" (DWR, 2006).

Groundwater was the primary source of water supply in the subbasin until the South Yuba Canal began deliveries in 1983, and pumping for agricultural use has declined considerably since 1983. Hydrographs of most wells in the subbasin show corresponding groundwater level declines prior to 1983 and recovery

since 1983. Olmsted and Davis (1961) reported that "depths to water in wells ranged from 15 to 35 feet throughout most of the area in 1948." In most cases, groundwater levels have recovered to the historical levels of the late 1940s. The rate of water level recovery has declined in recent years, because depths to water are currently shallow and the groundwater subbasin is essentially "full".

However, a more recent analysis of groundwater levels in the South Yuba County Groundwater Subbasin is reported in the South Yuba Subbasin Groundwater Sustainability Plan (SYSGSP, 2019).

Currently, groundwater levels are monitored using a series of monitoring wells within the entirety of the Yuba Subbasin. The network measures groundwater occurrence, flow directions, and hydraulic gradients between the principal aquifer and surface water features. Eighty-seven wells were selected for inclusion in the monitoring network based on the degree to which the data are considered representative of conditions around the well, use in existing monitoring programs, permission of the well owner to monitor the well, and existing period of record. Of these wells, 56 are in the South Yuba County Groundwater Subbasin. The wells are monitored either by Yuba Water Agency (YWA) or DWR. Of the wells monitored by YWA, 11 wells are measured semiannually, 20 wells are measured monthly, and 22 wells are measured continuously using data loggers. Of the wells monitored by DWR, 17 wells are measured monthly, and 17 wells are measured continuously using data loggers. The network also includes 28 multi-completion wells located at eight different sites, which are monitored by DWR or YWA on a continuous basis using pressure transducers and data loggers.

The groundwater system in the South Yuba County Groundwater subbasin, on average, has a somewhat greater inflow than outflow, slightly increasing groundwater storage to nearly 140,000 acre-feet (SYSGSP, 2019). Some of this increase in groundwater storage is a result of the long-term increase in groundwater levels in the South Yuba County Groundwater Subbasin due to the expansion of surface water deliveries into the Wheatland Water District area through the Yuba Wheatland Canal Project, which started delivering water in 2010. Average annual values for major components are described below.

The groundwater system is recharged from the Yuba Goldfields (41,500 AFY), rivers and streams (37,700 AFY), and conveyance systems (10,500 AFY). Rainfall and applied water percolate into the groundwater and contribute 60,300 AFY to inflow. Subsurface inflows from the North Yuba, Sutter, and North American Subbasins total 11,100 AFY. The majority of outflows are through groundwater pumping (97,900 AFY). The groundwater system also discharges to the Yuba Goldfields (40,400 AFY) and neighboring rivers and streams, including the Yuba River, Feather River, and Bear River (9,700 AFY combined). Groundwater also flows to the neighboring North Yuba, Sutter, and North American Subbasins (7,700 AFY combined). On average, groundwater storage increases 7,100 AFY.

Figure 5 shows the locations of the monitoring wells within the vicinity of the COW. Groundwater elevation data for most of these wells within the COW Sphere of Influence (SOI) were not up to date; however, Well 06R004, located on the western edge of the SOI, and Well 34F003 located on the eastern side of the SOI, have detailed groundwater level data that spans 2010 to 2023.

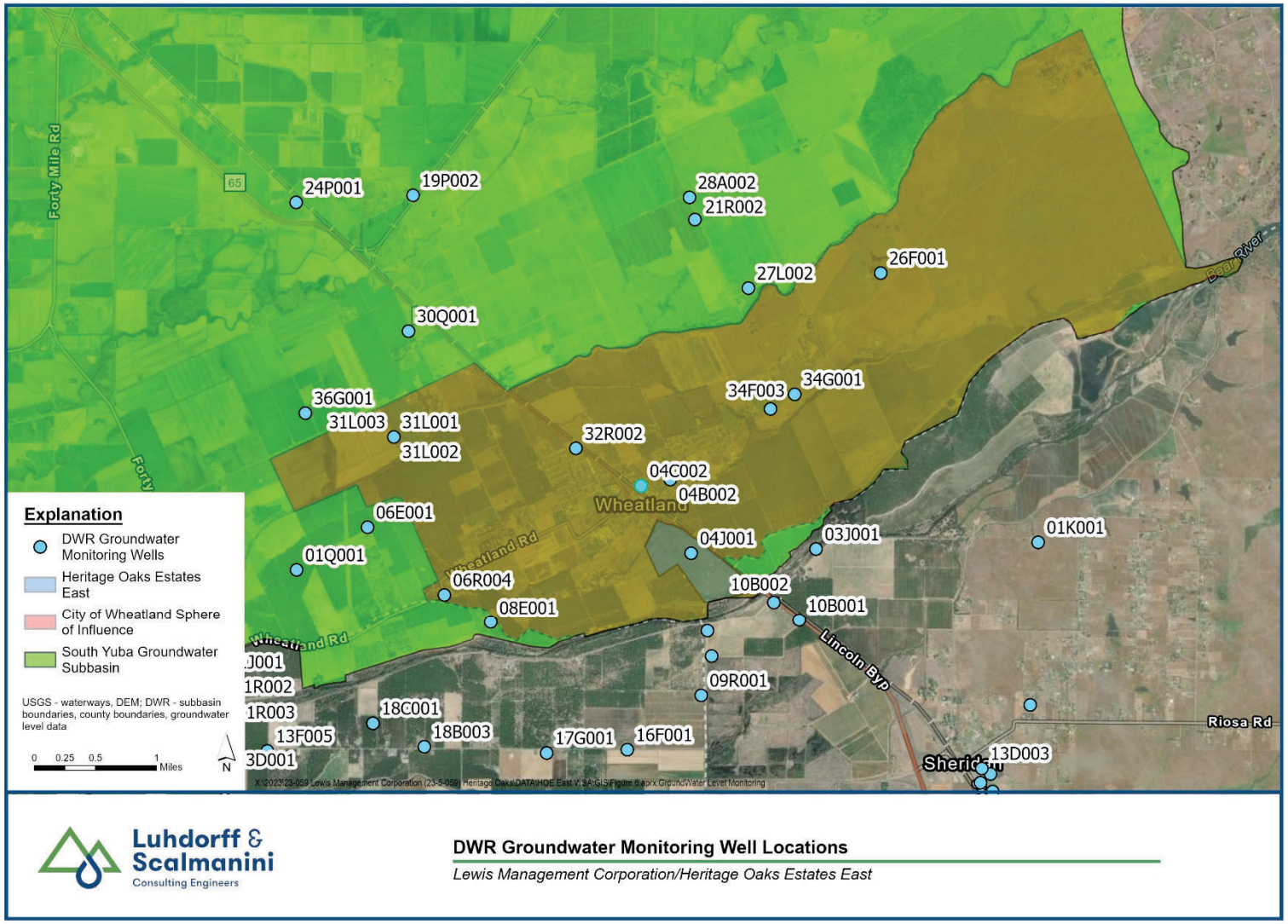


Figure 5. DWR Groundwater Monitoring Well Locations

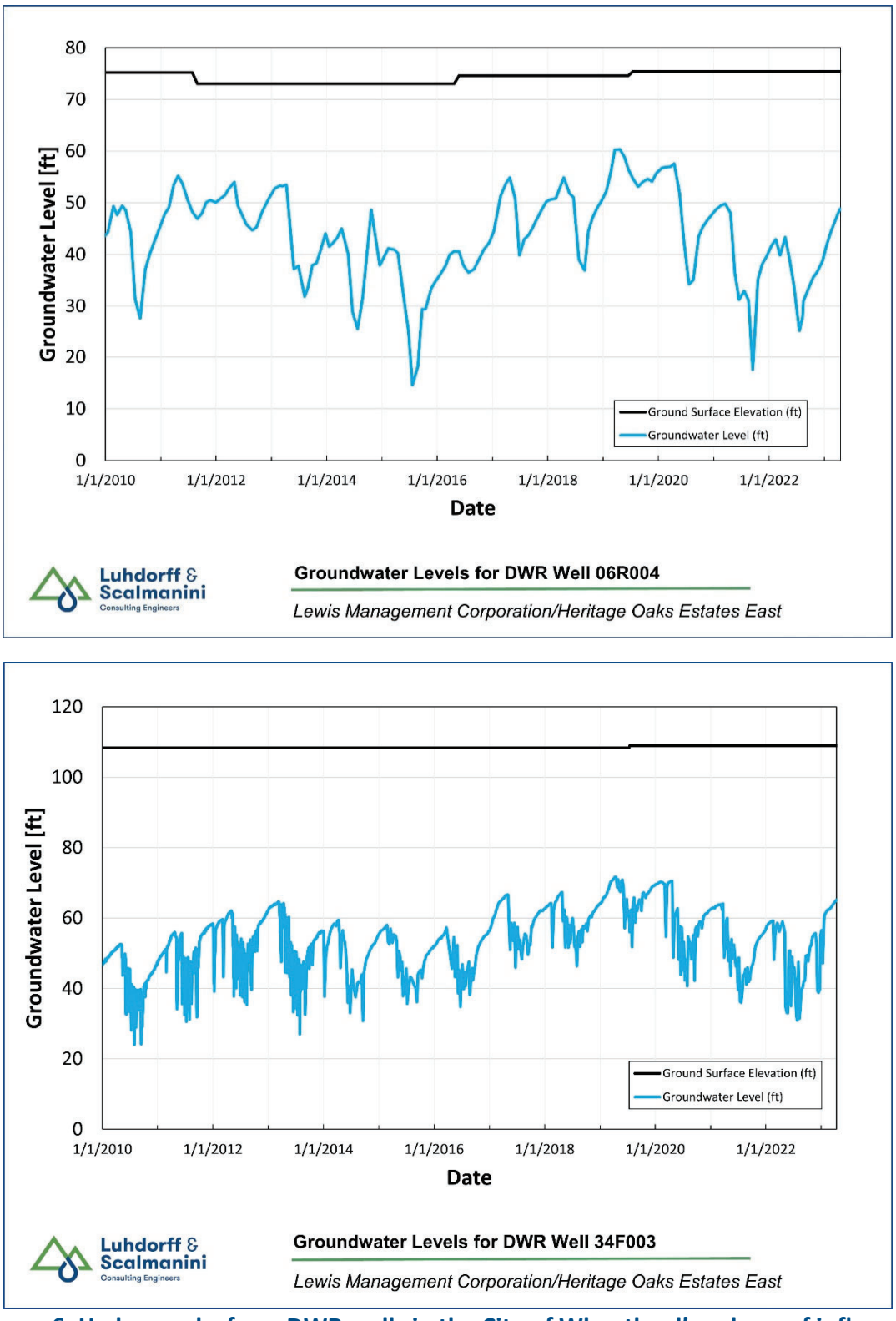


Figure 6. Hydrographs from DWR wells in the City of Wheatland's sphere of influence

3.2.1. Groundwater Levels in Future COW Service Area

Figure 6 contains the hydrographs for wells 06R004 and 34F003, respectively. Monitoring Well 34F003 shows high resolution data acquired over a twelve-year span. Seasonal variability is indicated by water level peaks during the summertime after the rainy winter season and dips in the wintertime after the dry summer months. Overall water levels trend toward a gaining aquifer, suggesting that the 2006 DWR assessment on groundwater levels was accurate. Monitoring Well 06R004 has lower resolution data, but seasonal variability and exceptionally dry spells are visible, especially during the years 2016 and 2022. While water levels do not show an overall decrease, they do appear to remain stable over the twelve-year span, suggesting no excessive drawdown from over pumping, further supporting the 2006 DWR assessment findings.

3.3. Groundwater Quality

Some of wells in **Figure 5** sampled by DWR had elevated iron and manganese concentrations that exceeded the secondary MCLs of 300 and 50 µg/L, respectively. Reported iron concentrations ranged from non-detect (<5 µg/L) to 968 µg/L, with a median value of 22 µg/L. Manganese concentrations ranged from non-detect (<5 µg/L) to 1,700 µg/L, with a median value of 140 µg/L. None of the DWR water quality results exceeded primary MCLs or other water quality standards.

Depths to the base of fresh groundwater in the South Yuba County Groundwater Subbasin range from around 300 feet in the east to around 900 feet in the west to over 1,000 feet in the southwest (DWR, 1978 and BE, 1992). For this purpose, fresh water was defined as having a TDS concentration less than 2,000 mg/L. Previous reports have expressed concern about the potential for upwelling of saline water as depths of new wells increase. Increased salinity due to upwelling is not anticipated to be a problem for COW wells, but this will need to be confirmed through water quality sampling and other field investigations.

According to a Technical Memorandum from LSCE to Lewis Operating Corp dated November 14, 2012 (LSCE, 2012), and a subsequent memorandum dated August 8, 2019 (LSCE, 2019), testing for iron and manganese in the North Park water well resulted in non-detection. Treatment will not be required for the proposed well other than chlorine for disinfection. Water quality data for the remaining six wells throughout the COW was not available for this report.

3.4. Existing And Planned Water Sources

This section contains a brief description of existing water supply, storage, and conveyance facilities in the current COW service area. COW is responsible for construction, operation, maintenance, and repair of its water treatment and distribution system.

3.4.1. Description of Existing Facilities

Groundwater is currently the only source of supply for the COW system, and the existing facilities include wells, pumping facilities, distribution and transmission pipelines, one elevated storage tank and a below ground storage tank totaling 0.73 million gallons. As discussed previously, COW currently operates six ground water wells that provide water to the ground storage tank, and three booster pumps that pump

water to the distribution system. The elevated storage tank is filled by system pressure. A central computer Supervisory Control and Data Acquisition (SCADA) system, in a main operations building uses sensors at each well to monitor chlorine levels, flow (gpm), line pressure, and pumping levels. The system also tracks ground and elevated tank water levels. Construction information for the six currently operating COW production wells and the North Park Well is summarized in **Table 1**. Four of the well sites (Well 3, Well 5, Well 7 and Well 8) have dedicated permanent standby power with automatic transfer switches in case of a power outage. The other two well sites (Well 4 and Well 6) have a receptacle plug available for a portable generator. The depth to ground water is approximately 80 to 100 feet with the wells drawing water from depths ranging from 160 to 280 feet below ground surface.

4. WATER DEMAND

This section presents the projected water requirements for the South Yuba County Groundwater Subbasin, as well as the HOE East development that is planned by Lewis and others based on phasing discussed in Chapter 1. New piping will need to be installed to connect HOE East to the COW. Accordingly, the sizing of the new well and storage facilities considers the cumulative water requirements of HOE East and the COW's current water demand.

4.1. Groundwater Supply and Demands for Yuba County

The Yuba County Integrated Regional Water Management Plan (IRWMP) separates water supply and demand into three categories: urban, agricultural, and environmental. Urban supply and demand are described as areas where the population is predominantly dependent on groundwater. Agricultural regions are parts of the county that use irrigated water either from the ground or from surface streams (or both). Environmental water demand is defined as "the amount of water purposefully allowed to flow through natural river channels and wetlands that is not diverted or used for urban or agricultural purposes" (Yuba County, 2018, p. 7-16). Urban use is listed by the Water Agency – Linda County Water District, California Water Service for the City of Marysville, Olivehurst PUD, the COW, and Beale AFB. The Yuba County IRWMP projects that total groundwater demand in the subbasin will overall reduce due to a very large decrease in agricultural demand that will only be partially offset by an increase in urban demand.

Table 1. Summary of COW Well Construction Data								
Well Name	Well Location	Date Drilled	Total Depth (ft bgs)	Well Yield (gpm)	Perforations (feet bgs)	Specific Capacity (gpm/ft)	DWR Well Log No.	State Well No.
#3	Corporation Yard	2001	280	740	Unknown	Unknown	Unknown	Unknown
#4	Police Department	2000	159	675	Unknown	Unknown	Unknown	Unknown
#5	Evergreen	1962	197	740	Unknown	Unknown	Unknown	Unknown
#6	High School	2000	230	740	Unknown	Unknown	Unknown	Unknown
#7*	Wheatland Ranch	2001	230	550	Unknown	Unknown	Unknown	Unknown
#8	Park Place	2003	176	800	Unknown	Unknown	Unknown	Unknown
North Park	HOE East	2016	275	1,000	138-200; 220-255	Unknown	Unknown	Unknown

*Offline since 2015 due to poor water quality

Table 2. Current and Projected Groundwater Demand in Yuba County						
Water Agency	Groundwater Supply (acre-feet)					
	2015 Supply	2015 Multiple Dry Years Supply	2020 Supply	2020 Multiple Dry Years Supply	2030 Supply	2030 Multiple Dry Years Supply
Linda CWD	16,470	16,470	16,470	16,470	16,470	16,470
California Water Service (City of Marysville)	2,902	2,753	2,821	2,710	2,838	2,727
Olivehurst PUD	3,872	3,872	4,371	4,371	10,552	10,552
Beale AFB	1,130	1,130	1,130	1,130	1,130	1,130

Source: Adopted from Yuba County IRWMP, 2018

Water supply data for the COW was not available in the Yuba County IRWMP. However, urban groundwater demand in the Wheatland area is presumed to increase based on the assumption that buildout of this area will continue beyond 2035. The current and projected water demands summarized in **Table 2** are based on normal years and multiple dry years. The projection shows that (in urban areas other than the COW), groundwater demand remains constant over time. This is a conservative estimate that is based in part on the fact that groundwater supplies do not experience reductions in dry years as do surface water supplies. Further, since groundwater levels in the subbasin are currently high and future pumping is projected to be less than current pumping, no supply cutbacks are expected during single-dry and multiple dry years through 2035.

4.2. Water Use and Peaking Factors for HOE East

In the LSCE Final Design Memo for the HOE East subdivision, dated November 11, 2012 (LSCE, 2012), LSCE states that they "previously revisited and updated the water demand for the proposed Heritage Oaks development and related those demands to the City of Wheatland supply and demand at the request of Lewis Operating Corp. in August of 2010. In review of data provided by COW, the current-day single family residential usage in Wheatland is essentially the same as it was in an earlier demand evaluation conducted for COW that used a database from 1999 through 2005." In a Technical Memorandum from LSCE to Lewis Operating Corp. in August of 2019 (LSCE, 2019), a reassessment of COW's water source capacity was conducted by LSCE to evaluate if COW'S existing source capacity could support additional residential buildout at the HOE East development. Results from modeling COW's "surplus" of water suggested that COW's existing facilities would provide sufficient capacity to meet estimated maximum day demand usage. Lewis recently revised the HOE East subdivision map and asked LSCE to recalculate the water supply and demand for the COW and the HOE East subdivision, therefore, a reassessment was completed. The COW current water demands are presented in **Table 3**.

Table 3. City of Wheatland Existing Water Demand	
Average Day Demand (ADD)	403 gpm
Maximum Day Demand (MDD)	1,799 gpm
Peak Hour Demand (PHD)	2,698 gpm

For calculation purposes and sizing of facilities, the Disaggregate Method was employed to develop customer class water usage factors for the COW. 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 base water usage for each customer class, e.g., gallons per day per residential service connection, commercial connection, and irrigation connection.

4.2.1. Residential Water Demand – Units 1 through 10

Based on the water use factors presented in the LSCE Technical Memorandum titled "Water Demand and Supply Assessment with Heritage Oaks Development in the City of Wheatland, California (October 2023)" and the development phasing implemented by Lewis discussed in Chapter 1, **Table 4** presents the residential water demand associated with the homes planned by Lewis.

Table 4. HOE East Residential Water Demand (Units 1 through 10)			
Water Use	Phase 1 (234 lots)	Phase 2 (220 Lots)	Phase 3 (231 Lots)
ADD	64 gpm	60 gpm	63 gpm
MDD	285 gpm	268 gpm	281 gpm
PHD	427 gpm	402 gpm	422 gpm

4.3. Commercial

One retail commercial – self storage complex is planned for Phase 2 in the southern portion of the development consisting of a 5.48-acre parcel. The projected MDD is 1.4 gpm and the PHD is 2.1 gpm.

4.4. Landscape Irrigation for HOE East

Irrigation demands were related to equivalent water requirements in terms of average day demand, maximum day demand and peak hour demand. **Table 5** below summarizes the estimated irrigation water demand for all three phases.

Table 5. HOE East Irrigation Water Demand

Water Consumption	Phase 1	Phase 2	Phase 3
ADD (gpm)	4	9	4
MDD (gpm)	19	38	19
PHD (gpm)	29	58	29
Water Service Connections	1	2	1

4.5. Total Water Requirements

The total water requirements in HOE East are the sum of the residential, irrigation, and commercial water demands. **Table 6** shows the total water requirements for HOE East, including residential, commercial and the irrigation demands for each phase. The sizing of water facilities also considers the COW's existing water demand. **Table 7** summarizes the total water requirements of COW and HOE East combined.

Table 6. HOE East Total Water Requirements			
Phase	**HOE Phase 1**	**HOE Phase 2**	**HOE Phase 3**
Development Included	Units 1-3	Units 4-6	Units 7-10
Residential			
ADD	64 gpm	60 gpm	63 gpm
MDD	285 gpm	268 gpm	281 gpm
PHD	427 gpm	402 gpm	422 gpm
Commercial			
ADD	0 gpm	0.3 gpm	0.3 gpm
MDD	0 gpm	1 gpm	1 gpm
PHD	0 gpm	2 gpm	2 gpm
Irrigation			
ADD	4 gpm	9 gpm	4 gpm
MDD	19 gpm	38 gpm	19 gpm
PHD	29 gpm	58 gpm	29 gpm
Total Water Demand			
ADD	68 gpm	69 gpm	67 gpm
MDD	304 gpm	308 gpm	301 gpm
PHD	456 gpm	462 gpm	451 gpm

Table 7. COW and HOE East Total Water Requirements					
Water Use	**City of Wheatland**	**Heritage Oaks East**			**City + HOE East**
		Phase 1	**Phase 2**	**Phase 3**	
ADD	403 gpm	68 gpm	69 gpm	67 gpm	607 gpm
MDD	1,799 gpm	304 gpm	308 gpm	301 gpm	2,712 gpm
PHD	2,698 gpm	457 gpm	461 gpm	451 gpm	4,067 gpm

4.6. Groundwater Supply Sufficiency

SB 610 requires that the water supplier (COW) report findings relative to water supply sufficiency to meet projected water demands, in addition to existing and planned future uses, under the normal, single-dry, and multiple-dry year planning scenarios. Sufficiency is addressed in this section by comparing the projected water demands outlined above with the available supply based on the data and analysis described below.

4.6.1. Water Supply Availability (Normal and Dry Years)

The comparison of current groundwater levels and pumping in Yuba County can be used to assess the impacts of projected pumping by COW within the HOE East development to meet future water demands. Although no estimates of historical pumping are available, generally rising groundwater levels since 1983 indicate that current pumping in the South Yuba County Groundwater Subbasin is less than what occurred historically. The level of sustainable pumping has not been quantified due to the lack of historical pumping data. However, based on evidence that groundwater levels have stabilized or continued to rise in recent years, the sustainable pumping is assumed to be greater than the current pumping (Yuba County, 2018).

The sustainability of groundwater pumping within a basin is primarily determined by the rate at which groundwater naturally replenishes. Currently, it is likely that any extra recharge efforts may not be viable, as groundwater levels in the subbasin are generally close to their maximum capacity. However, in the future, some increase in recharge in the western part of the subbasin can be anticipated. This is because lowered water levels resulting from increased municipal pumping will create additional storage space within the aquifer. The amount of groundwater flow from the upper to the lower zones will also increase in future years as additional pumping from deeper municipal wells creates a downward gradient for leakage between zones. Available data indicate that there are no known thick or continuous confining layers that would significantly limit leakage to the lower zone. However, actual leakage will be reduced because only new wells in COW would be expected to pump significant quantities of water from the lower zone.

Compared to surface water supplies, groundwater supplies are much less susceptible to shortages based on seasonal or climatic conditions. Conjunctive use strategies employed by water purveyors that use both surface water and groundwater often involve increased groundwater pumping during dry years to offset reduced surface water deliveries. COW does not use surface water, but there are no restrictions in place that would limit groundwater pumping during single-dry or multiple-dry years. **Table 8** outlines demand in HOE East and supply patterns under normal, single-dry, and multiple-dry years. The “Projected Groundwater Demand” is based on The California State Water Resources Control Board’s Attachment F – DDW Annual Inspection for COW and COW’s Public Water System Statistics; the “Available Groundwater Supply” for the Project is estimated to be greater than the demand; the “Surplus (Supply Less Demand)” is the difference between the supply and the demand. Although the available supply will be higher in wet years and lower in dry years, COW expects to meet projected demands within its service area through 2043 under all climatic conditions.

Table 8. Comparison of Dry Year Groundwater Demand and Supply for HOE East					
	Normal	Single Dry	Multiple Dry Years		
			1	2	3
	ac-ft/yr				
Projected Groundwater Demand[1]	4,374	4,374	4,374	4,374	4,374
Available Groundwater Supply[2]	5,758	5,471[3]	5,471[3]	5,471[3]	5,471[3]
Surplus (Supply Less Demand)	1,385	1,097	1,097	1,097	1,097

1. Groundwater demand for 2043 is based on maximum day demand estimates for COW plus Heritage Oaks.
2. Available groundwater supply is greater than projected groundwater demand. Thus, there is sufficient capacity and a new well will be added during Heritage Oaks development.
3. Assumes groundwater source capacity is reduced 5% during a single dry year and the multiple dry years.

4.6.2. Supply Sufficiency

Table 9 shows the comparison of the current and future groundwater demand and supply for HOE East for 2020 through 2035 in five-year increments. Similar to **Table 8**, **Table 9** shows in all years that supply is sufficient to meet demand.

Table 9. Comparison of Future Groundwater Demand and Supply for HOE East				
	Groundwater Demand and Supply (ac-ft/yr)			
	2020	2025	2030	2035
Projected Groundwater Demand[1]	2,902	2,902	4,374	4,374
Available Groundwater Supply[2]	5,758	5,758	7,371[3]	7,371[3]
Surplus (Supply Less Demand)	2,857	2,857	2,998	2,998

1. Assumes 100% buildout of HOE East by 2030. The rate of projected growth is estimated and is subject to change due to economic and other factors.
2. Available groundwater supply is greater than projected groundwater demand.
3. A new well will be added with Heritage Oaks development.

Table 10 shows the comparison of the projected future demand and supply for the South Yuba County Groundwater Subbasin. The "Projected Groundwater Demand" is based on all types of outflows (e.g., groundwater extraction, stream discharge, subsurface discharge), and the "Surplus (Supply Less Demand)" is the difference between the estimated inflow and the demand.

Table 10. Comparison of Future Groundwater Demand and Supply for SYCGS			
	Groundwater Demand and Supply (acre-feet/year)		
	Current Volume	Projected Volume	Projected with Climate Change
Projected Groundwater Demand	153,200	155,700	157,300
Available Groundwater Supply*	162,300	162,800	164,500
Surplus (Supply Less Demand)	9,100	7,100	7,200

*Available groundwater supply is assumed to be greater than demand. This assumption is based on the observation of stable to increasing groundwater levels at almost all wells monitored by DWR in the subbasin in recent years.

Based on the data presented in **Table 10**, it is assumed that even with climate change-driven dry years, the South Yuba County Groundwater Subbasin is expected to have sufficient groundwater supplies to meet demands through 2043 (YCWA, 2019). This includes the projected demands for HOE East subdivision as well as for the COW service area.

While projected future demand in the subbasin is estimated to be greater than current demand (**Table 10**), it is assumed that future pumping will be significantly less than the average groundwater recharge. Therefore, this assessment finds that the subbasin will have sufficient groundwater supplies to serve the HOE East subdivision and other projected demands over the next 20 years. Increased pumping from the lower zone will result in lower water levels, but leakage from the upper zone is expected to be sufficient to prevent water level declines from becoming progressive. Additional groundwater monitoring is recommended to evaluate water level changes as the number of multi-dry years increases, and the COW's limits expand.

5. REFERENCES

Bookman-Edmonston Engineering, Inc. 1992. *Ground Water Resources and Management in Yuba County*. Prepared for Yuba County Water Agency. Sacramento, CA.

Bloyd, R.M. Jr. 1978. Report of the U.S. Geological Survey – *Ground-Water Conditions in the Sacramento Valley, California, 1912, 1961, and 1971.* Included as Appendix A in California

Department of Water Resources Bulletin No. 118-6. *Evaluation of Ground Water Resources:* Sacramento Valley. Sacramento, CA.

Bryan, Kirk. 1923. *Geology and Ground-Water Resources of Sacramento Valley, California*. U.S. Geological Survey Water-Supply Paper 495.

California Department of Water Resources. 1978. *Evaluation of Ground Water Resources: Sacramento Valley*. Bulletin 118-6.

California Department of Water Resources. 1998. *Evaluation of Ground Water Resources: Sacramento Valley*. Bulletin 118-6.

California Department of Water Resources. 2003b. *California's Groundwater.* Bulletin 118 - Update 2003.

California Department of Water Resources. 2006. *Groundwater Basin Descriptions*. Available: http://www.groundwater.water.ca.gov/bulletin118/basin_desc/. Sacramento, CA.

CH2M Hill. 2003. Impact Evaluation of Future Groundwater Pumping for River Highlands

Community Services District, Yuba County. Prepared for River Highlands CSD. Redding, CA.

Luhdorff and Scalmanini Consulting Engineers. 2007. *Water Supply Assessment for the Bear River Project.* Prepared for Gerry N. Kamilos, LLC, and Olivehurst Public Utilities District. Woodland, CA.

Minter and Associates. 2006. City of Wheatland General Plan Policy Document.

Northern California Water Association. 2006. *Sacramento Valley Integrated Regional Water Management Plan*. Sacramento, CA.

Olmsted, F.H. and Davis, G.H. 1961. Geologic Features and Ground-Water Storage Capacity of the Sacramento Valley, California. U.S. Geological Survey Water-Supply Paper 1497.

Planwest Partners, Inc. 2005. *Olivehurst Community Plan*. Prepared for the Olivehurst Planning Committee. Arcata, CA.

SYSGSP. 2021. South Yuba Subbasin Groundwater Sustainability Plan. California Department of Water Resources.

Yuba County Water Agency. 2019. Yuba Subbasins Water Management Plan: A Groundwater Sustainability Plan.

APPENDIX A

Heritage Oaks Estates – East Tentative Subdivision Map

TENTATIVE SUBDIVISION MAP

TSTM 2023-0001 (LARGE AND SMALL LOT)
HERITAGE OAKS ESTATES - EAST

WHEATLAND, CALIFORNIA

NOVEMBER 2022 - REVISED MARCH 10, 2023

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.

Re-Certified Exp. 12-31-23

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
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.

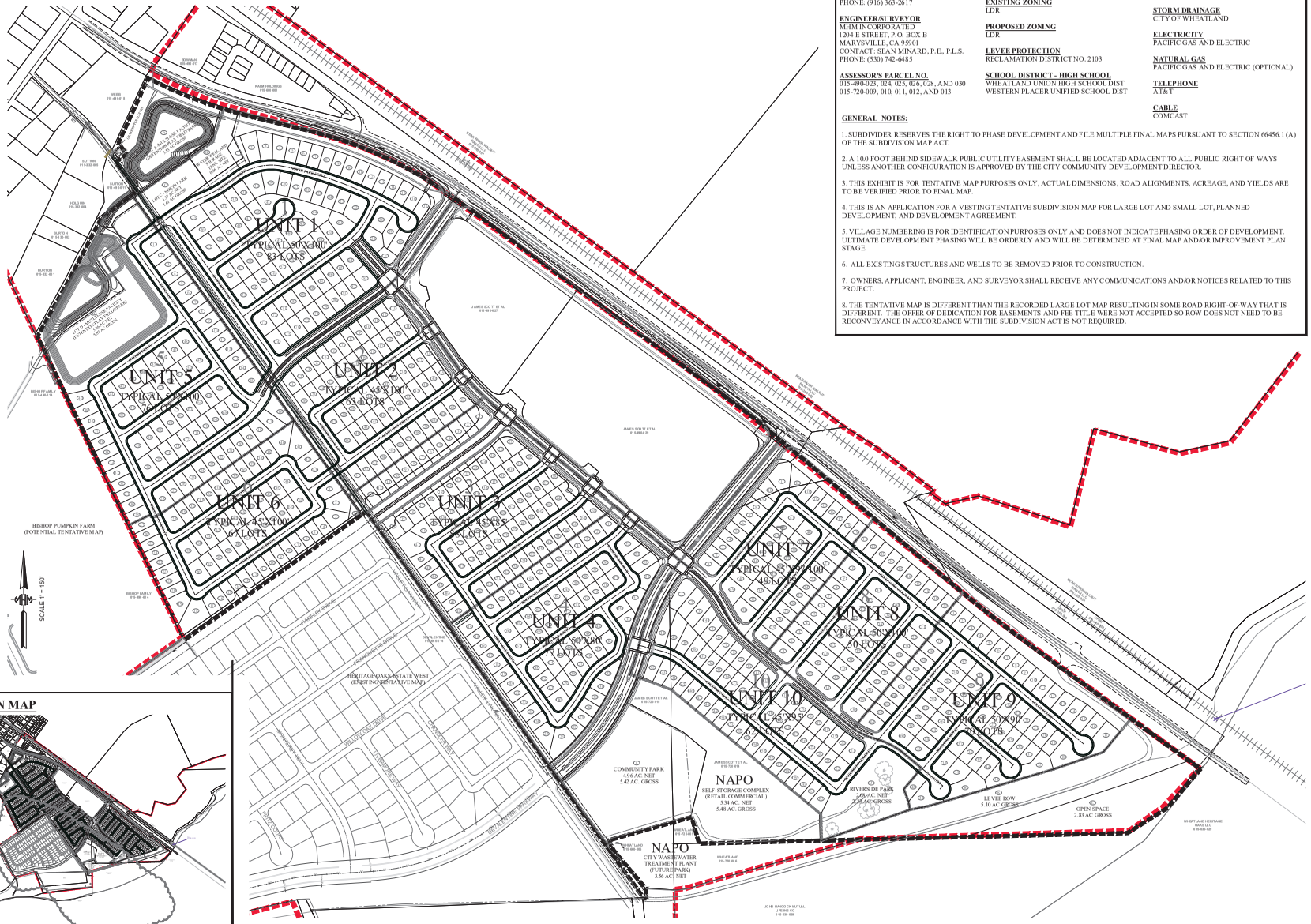
4. THIS IS AN APPLICATION FOR A VESTING TENTATIVE SUBDIVISION MAP FOR LARGE LOT AND SMALL LOT, PLANNED DEVELOPMENT, AND DEVELOPMENT AGREEMENT.

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.

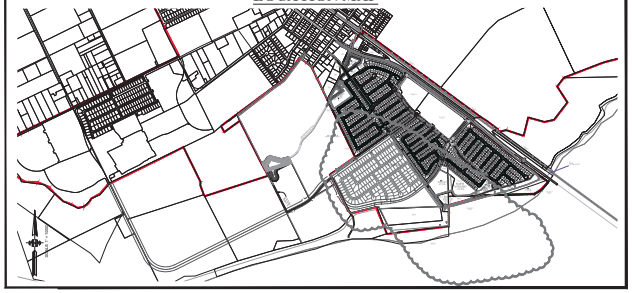
6. ALL EXISTING STRUCTURES AND WELLS TO BE REMOVED PRIOR TO CONSTRUCTION.

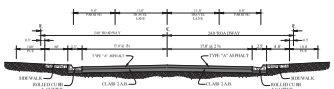
7. OWNERS, APPLICANT, ENGINEER, AND SURVEYOR SHALL RECEIVE ANY COMMUNICATIONS AND/OR NOTICES RELATED TO THIS PROJECT.

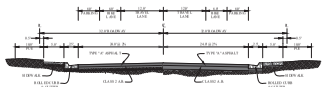
8. THE TENTATIVE MAP IS DIFFERENT THAN THE RECORDED LARGE LOT MAP RESULTING IN SOME ROAD RIGHT-OF-WAY THAT IS DIFFERENT. THE OFFER OF DEDICATION FOR EASEMENTS AND FEE TITLE WERE NOT ACCEPTED SO ROW DOES NOT NEED TO BE RECONVEYANCE IN ACCORDANCE WITH THE SUBDIVISION ACT IS NOT REQUIRED.

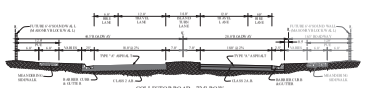


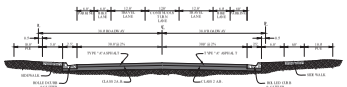
LOCATION MAP

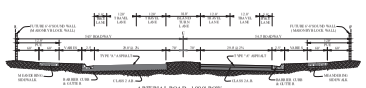












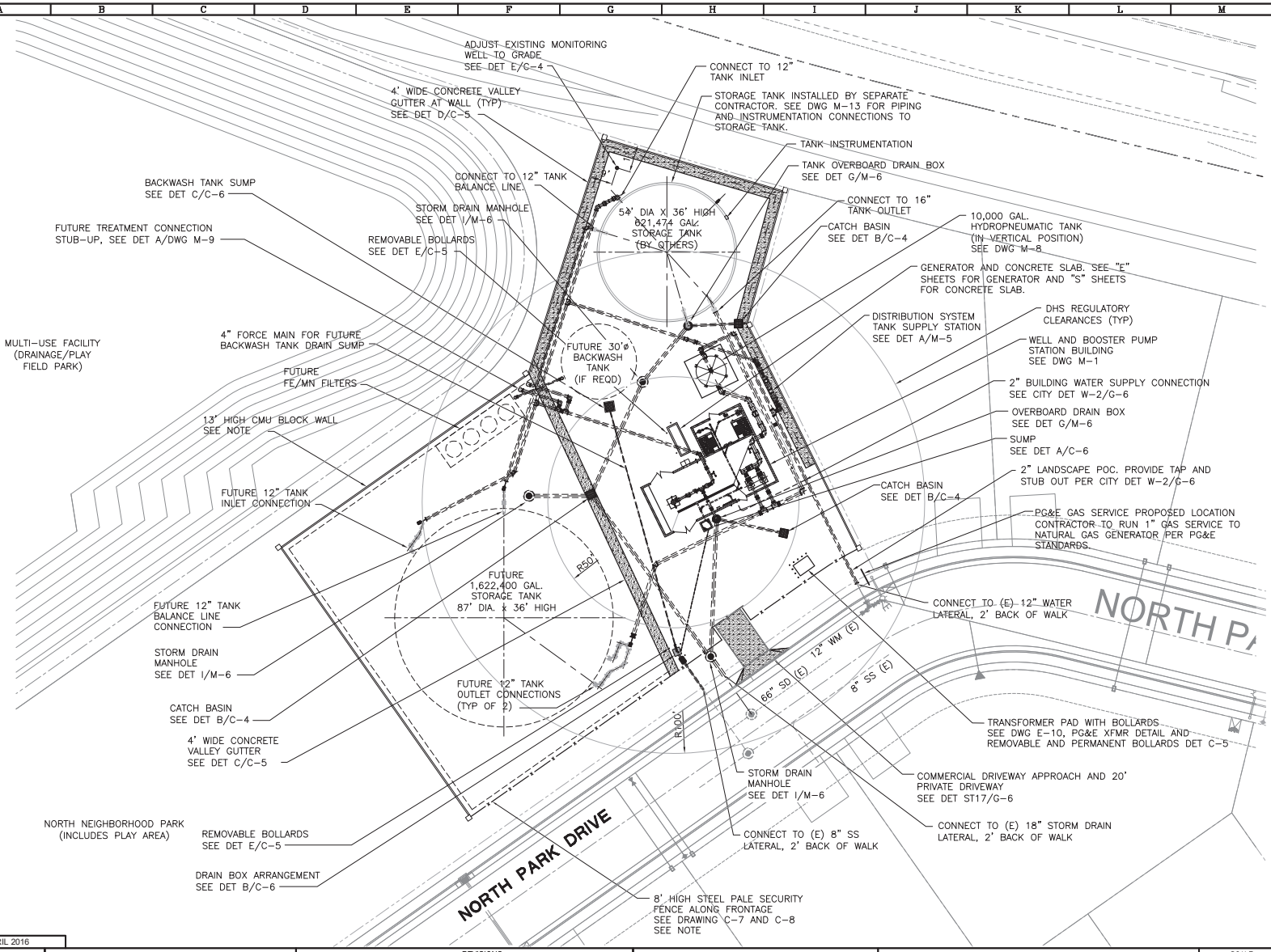
2 INDICATES PROPOSED PHASE

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

APPENDIX B

North Park Drive Well and Storage Station - Site Plan



NOTE:

WALLS AND FENCING SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF WATER SYSTEM START-UP TESTING.

REGISTERED PROFESSIONAL ENGINEER JUSTIN M. SHOBE No. C 77669 Exp. 6/30/2017 CIVIL STATE OF CALIFORNIA

CAD FILE: G:/Projects/Lewis Operating Corp/10-5-100/Pump Station/C-1.dwg CFG FILE: LSCE2500.PCP_MRG DATE: 03-30-16 3:12pm

APRIL 2016

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

FILE C-1.dwg
DRAWN DWT
DESIGNED JMS
CHECKED WAG
CHECKED

LUHDORFF & SCALMANINI CONSULTING ENGINEERS

500 FIRST STREET
WOODLAND, CALIFORNIA
PHONE: (530) 661-0109

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

YUBA COUNTY

LEWIS OPERATING CORPORATION
NORTH PARK DR.-WELL & STORAGE

SUBMITTED: _____ DATE: _____

SUBMITTAL APPROVED: _____ DATE: _____

NORTH PARK DRIVE SITE PLAN

SCALE 1"=20'

DRAWING NUMBER **C-1**

SHEET NUMBER **11** OF **48**

CITY OF WHEATLAND

HERITAGE OAKS SUBDIVISION
NORTH PARK DR.-WELL & STORAGE

SUBMITTED BY:

APPROVED: _____, 2016
CITY ENGINEER

DESIGNED BY:
DRAWN BY:
CHECKED BY:
JOB NO.:
FILE NAME:

SHT. NO.: _____ OF _____
CITY DWG. NO.:

Appendix D

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

Revised September 17, 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 an 18-inch gravity outlet from the east detention pond to Grasshopper Slough. The outlet will be equipped with a flap gate to prevent backflow from Grasshopper Slough into the pond. Since both ponds are hydraulically connected, the final location of the gravity drain will be determined during design and consulting with the environmental consultant to avoid sensitive habitat and jurisdictional permitting issues. At this time, the most likely gravity outflow pipeline is from the east pond to Grasshopper Slough only;

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 detention ponds 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 detention 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 drainage 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 20, 2021

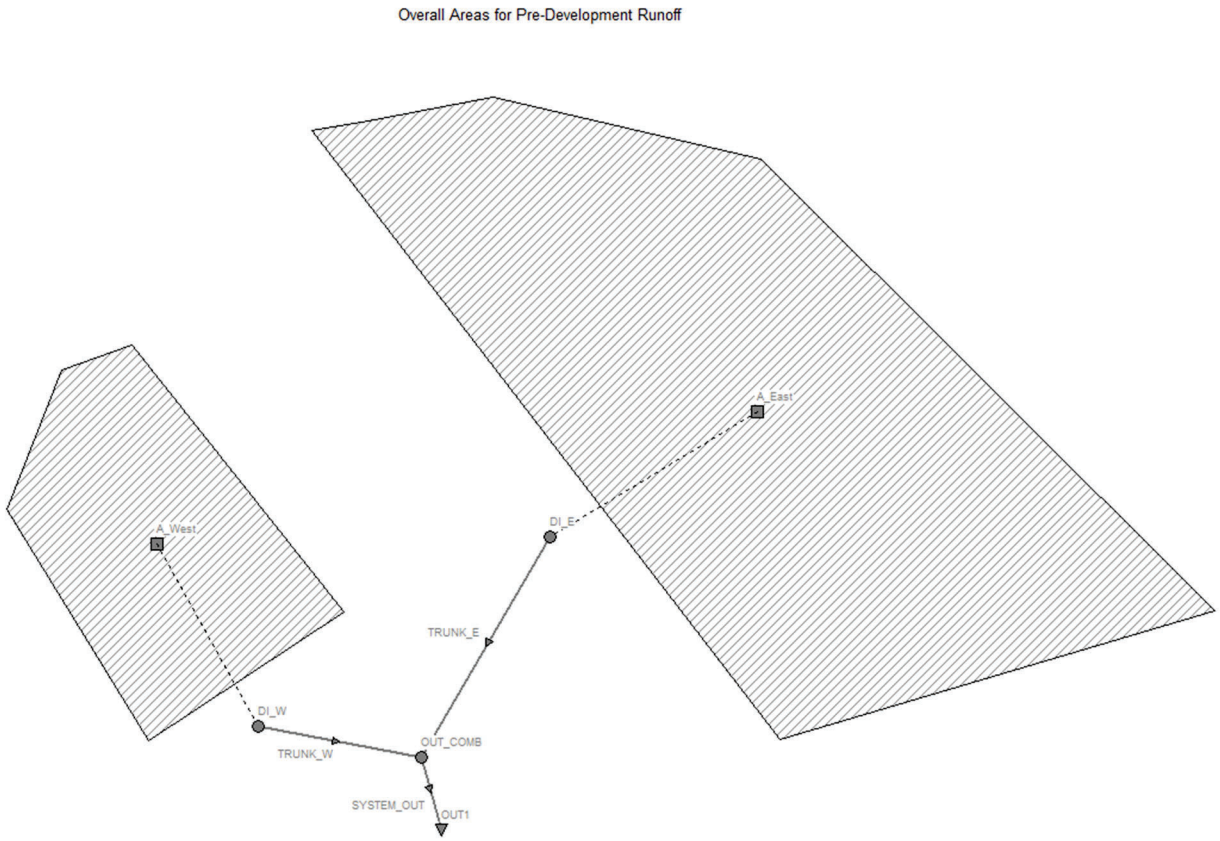


Figure 2-2: Schematic view of the SWMM model including existing basins.

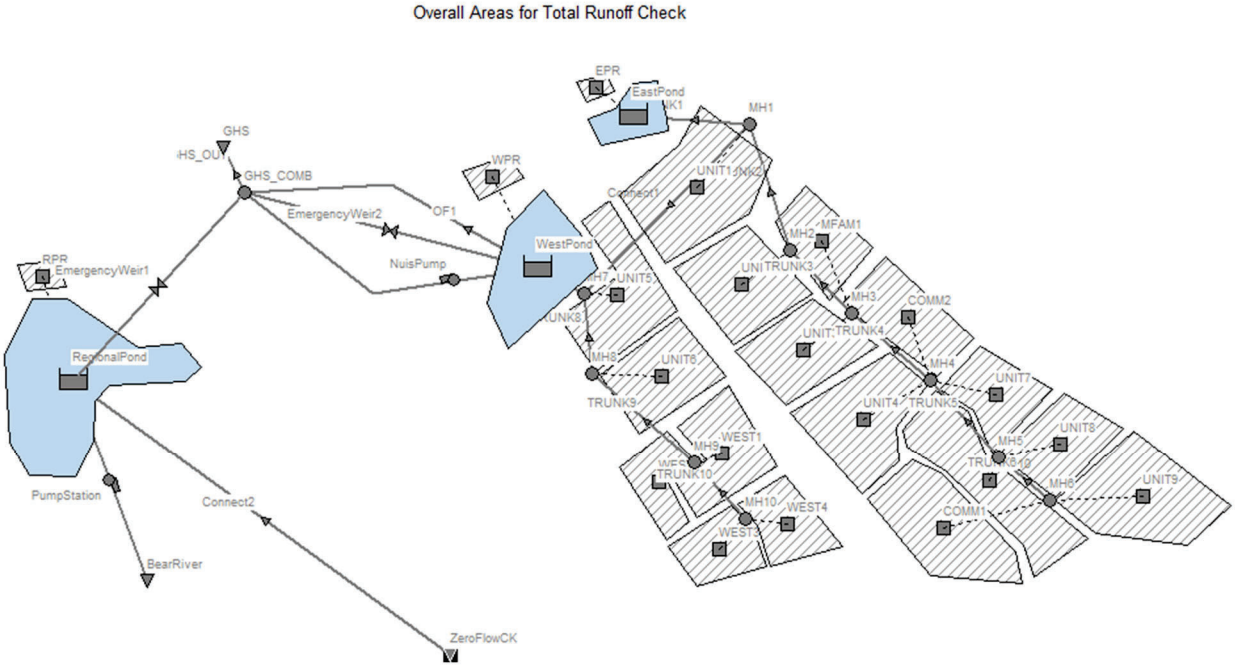


Figure 2-3: Schematic view of the SWMM model including planned future improvements.

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. Since both ponds are hydraulically connected, the final location of the gravity drain will be determined during design and consulting with the environmental consultant to avoid sensitive habitat and jurisdictional permitting issues. At this time, the most likely gravity outflow is from the east pond. This outfall is an 18" 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. Since both ponds are hydraulically connected, the final location of the gravity drain will be determined during design

and consulting with the environmental consultant to avoid sensitive habitat and jurisdictional permitting issues. At this time, the most likely gravity outflow is from the east pond only;

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 east detention pond to Grasshopper Slough. The outlet will be equipped with a flap gate to prevent backflow from Grasshopper Slough into the pond. Since both ponds are hydraulically connected, the final location of the gravity drain will be determined during design and consulting with the environmental consultant to avoid sensitive habitat and jurisdictional permitting issues. At this time, the most likely gravity outflow is from the east pond to Grasshopper Slough only;

7. Construction of an 18-inch gravity outlet from the west detention pond to Grasshopper Slough. This pipeline shall have sluice gate and flap gate. Since both ponds are hydraulically connected, the final location of the gravity drain will be determined during design and consulting with the environmental consultant to avoid sensitive habitat and jurisdictional permitting issues. There is only a need for one gravity outlet pipeline so this would be considered an optional secondary system and will only be considered if sensitive habitat and jurisdictional permitting issues can be avoided. At this time, the most likely gravity outflow pipeline is from the east pond to Grasshopper Slough only;

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 east detention pond to Grasshopper Slough. The outlet will be equipped with a flap gate to prevent backflow from Grasshopper Slough into the pond. Since both ponds are hydraulically connected, the final location of the gravity drain will be determined during design and consulting with the environmental consultant to avoid sensitive habitat and jurisdictional permitting issues. At this time, the most likely gravity outflow is from the east pond to Grasshopper Slough only.;

7. Construction of an 18-inch gravity outlet from the west detention pond to Grasshopper Slough. This pipeline shall have sluice gate and flap gate. Since both ponds are hydraulically connected, the final location of the gravity drain will be determined during design and consulting with the environmental consultant to avoid sensitive habitat and jurisdictional permitting issues. There is only a need for one gravity outlet pipeline so this would be considered an optional secondary system and will only be considered if sensitive habitat and jurisdictional permitting issues can be avoided. At this time, the most likely gravity outflow pipeline is from the east pond to Grasshopper Slough only.;

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 1

SWMM 5 Outputs for pond depths during the 100-year, 24-hour storm.

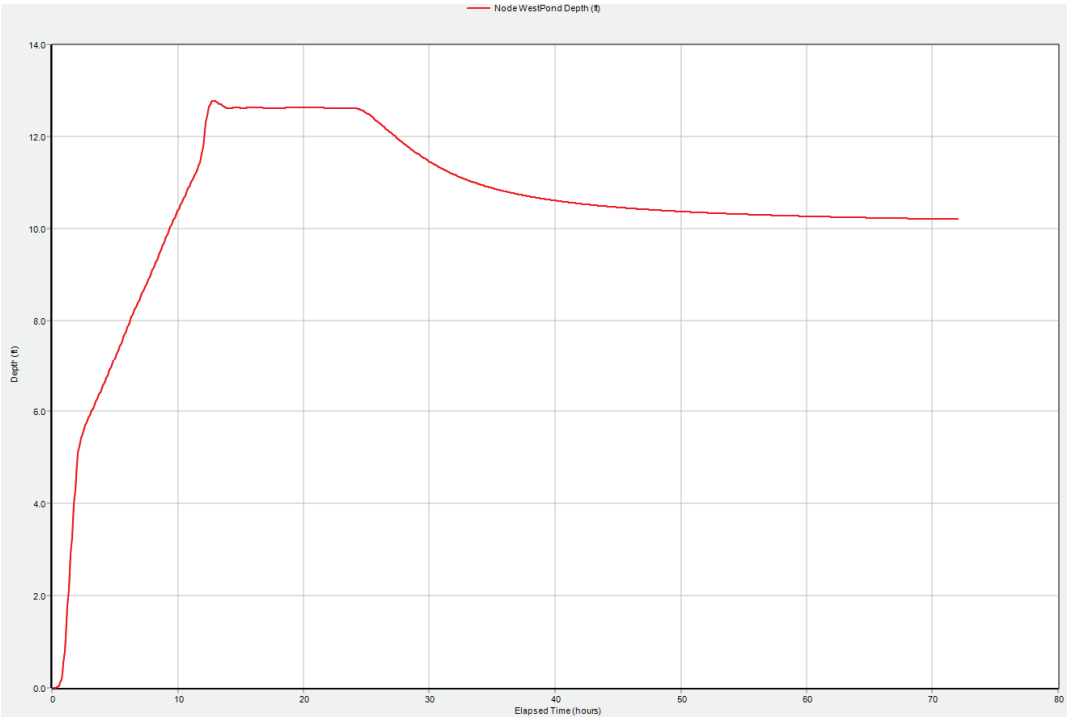


Figure 1 – Graph of Depth vs Time for West Peaking Pond for the 100-year, 24-hour storm.

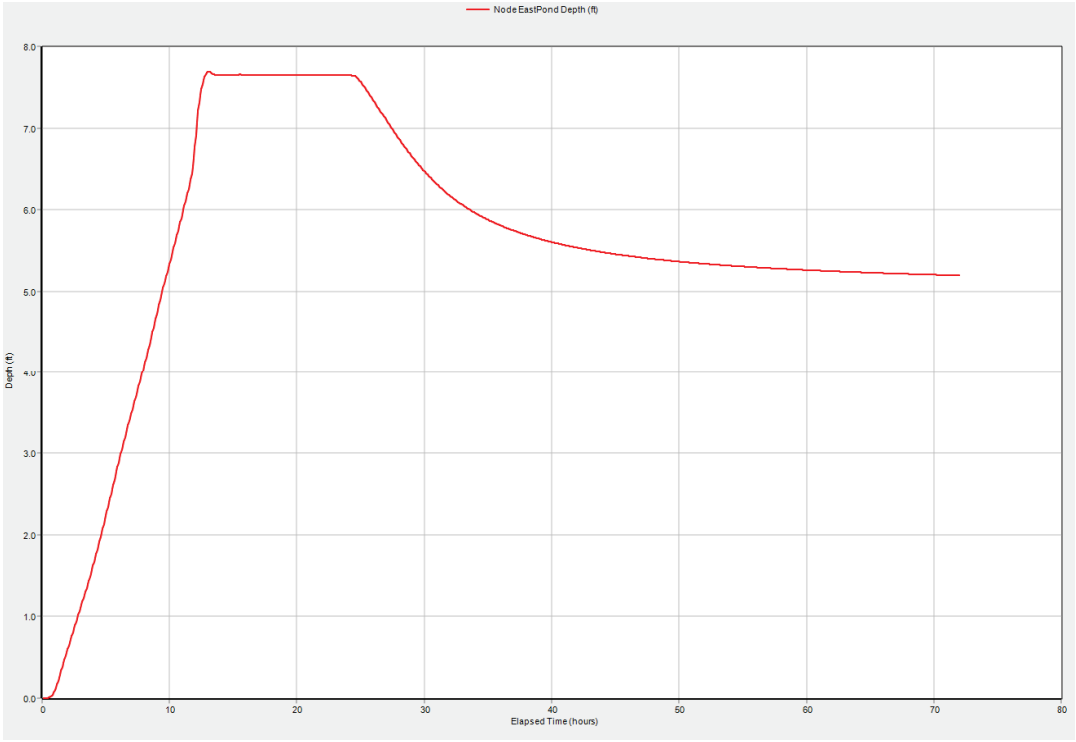


Figure 2 – Graph of Depth vs Time for the East Peaking Pond for the 100-year, 24-hour storm.

APPENDIX 2

SWMM 5 Outputs for trunk line outflows during the 25-year, 24-hour storm (both phases constructed).

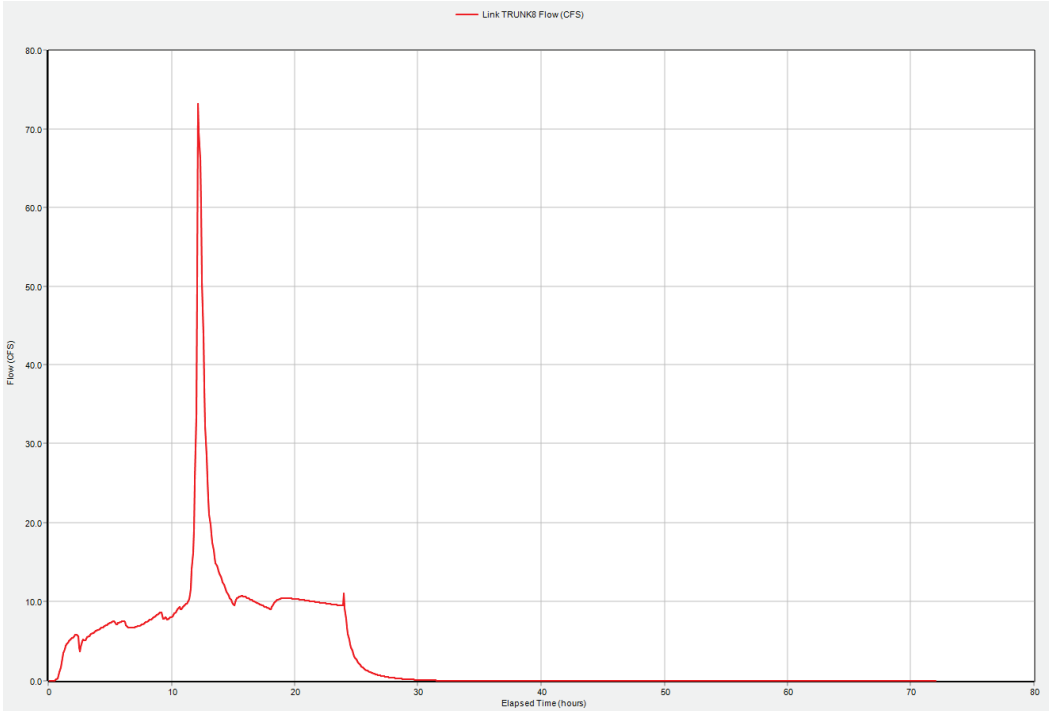


Figure 1 – West Trunk Line Flow vs Time for the 25-year, 24-hour storm.

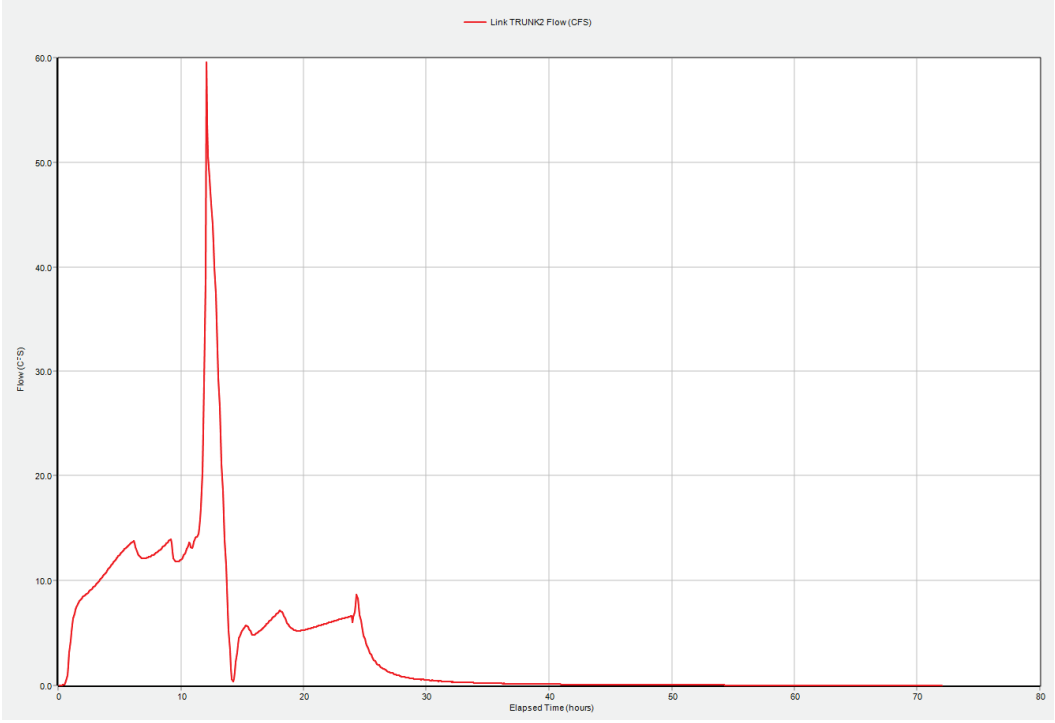


Figure 2 – East Trunk Line Flow vs Time for the 25-year, 24-hour storm.

APPENDIX 3

SWMM 5 Outputs for outflows from Detention Ponds to Grass Hopper

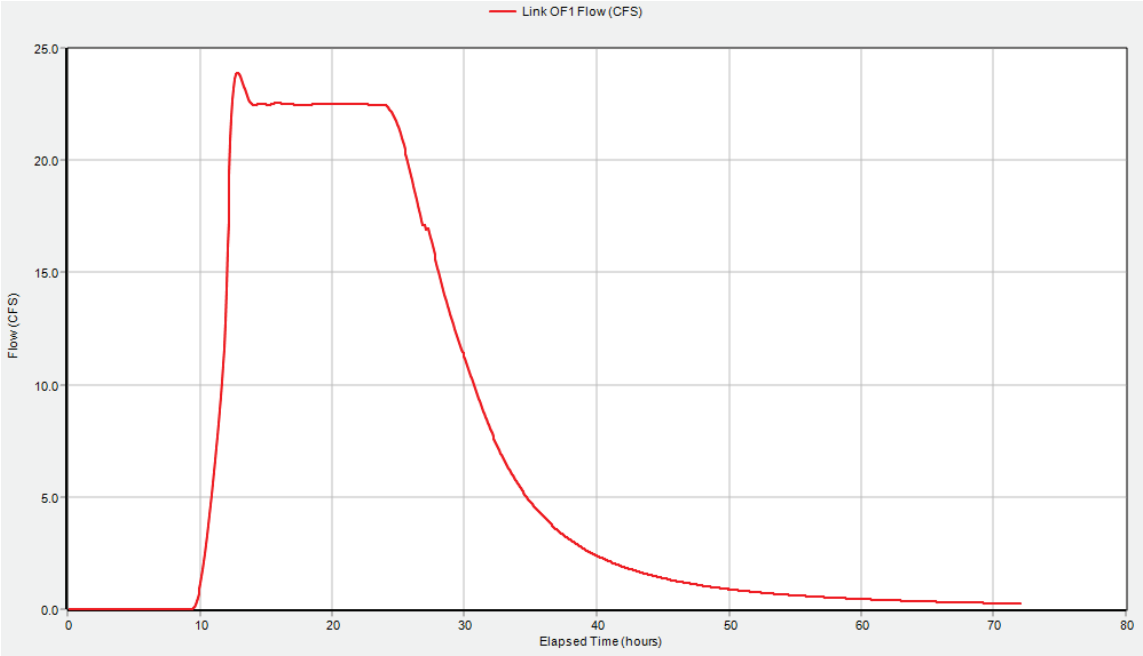


Figure 1 – Outflows from Detention Ponds to Grass Hopper Slough for the 100-year, 24-hour storm.

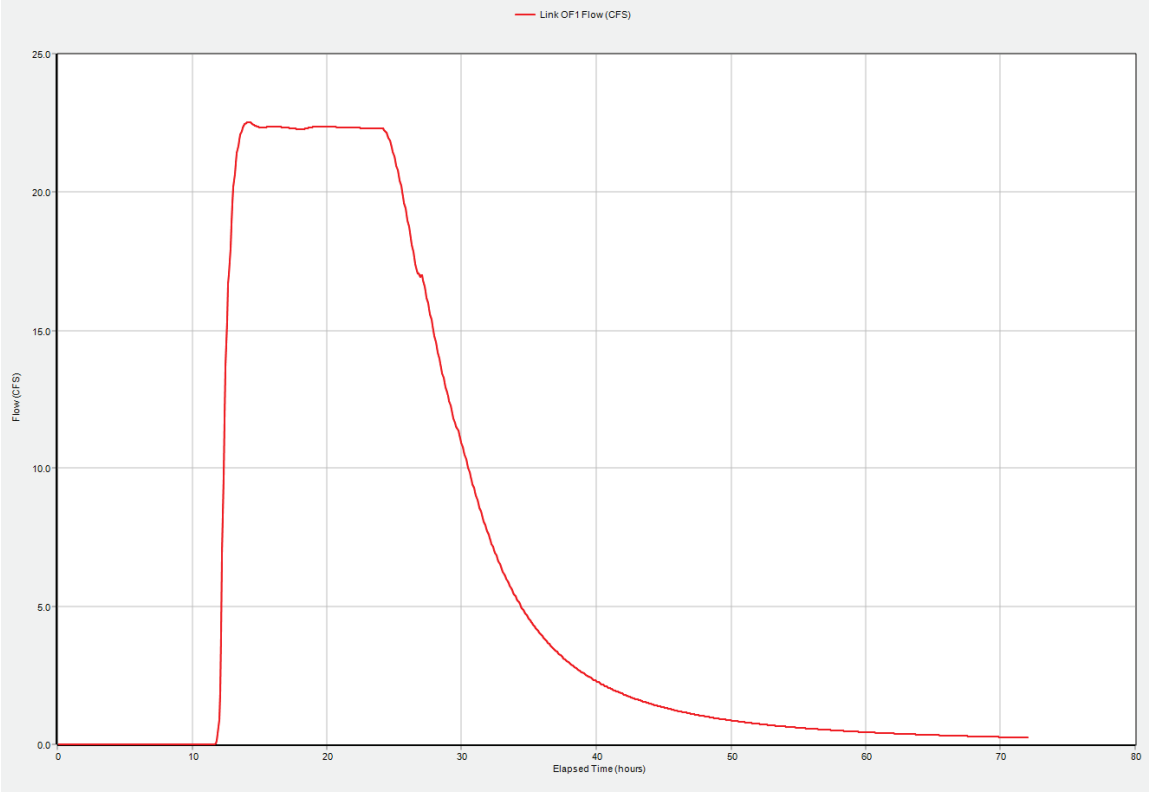


Figure 2 - Figure 1 – Outflows from Detention Ponds to Grass Hopper Slough for the 25-year, 24-hour storm.

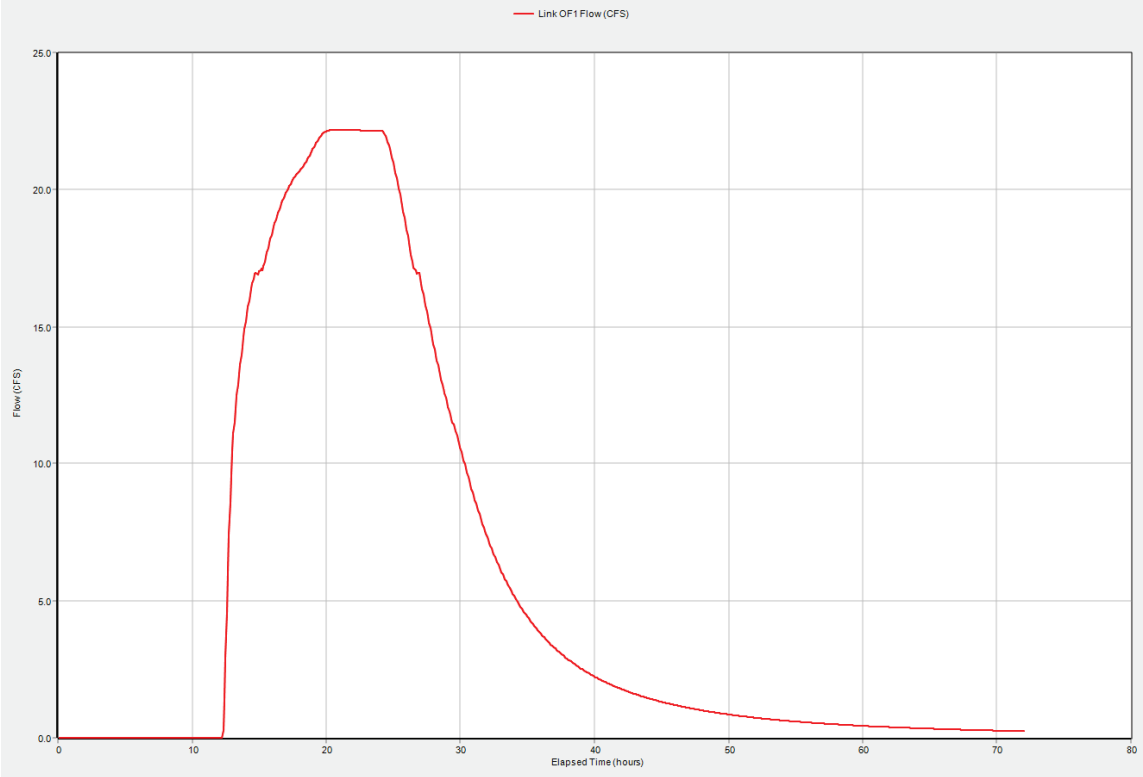


Figure 3 – Outflows from Detention Ponds to Grass Hopper Slough for the 10-year, 24-hour storm.