Public Draft

Bradbury Ranch Master Plan

Supplemental EIR to the Delhi Community Plan EIR

May 23, 2023



Prepared by EMC Planning Group

PUBLIC DRAFT

BRADBURY RANCH MASTER PLAN Supplemental EIR to the Delhi Community Plan EIR

PREPARED FOR

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1.0 Introduction

1.1 Purpose for Preparing the EIR

The County of Merced, acting as the lead agency, has determined that the proposed Bradbury Ranch Master Plan (hereinafter "proposed project" or "master plan") could result in significant adverse environmental impacts and has required that a supplemental environmental impact report (SEIR) be prepared to evaluate the potentially significant adverse environmental impacts. This SEIR examines whether the proposed project could result in new or more significant impacts than are identified in the *Draft Environmental Impact Report for the Delhi Community Plan SCH# 2004081181* (Adrienne Graham and Associates 2005) (hereinafter "community plan EIR"). This SEIR includes information and analysis that is supplemental to the community plan EIR. Taken together this SEIR and the community plan EIR are adequate for assessing the environmental impacts of the proposed project.

This SEIR has been prepared in compliance with the California Environmental Quality Act (CEQA) of 1970, as amended, to inform public decision makers and their constituents of the environmental impacts of the proposed project. In accordance with CEQA guidelines, this report describes both beneficial and adverse environmental impacts generated by the proposed project and suggests measures for mitigating significant adverse environmental impacts resulting from the proposed project.

1.2 Type of EIR and SEIR Scope

Type of EIR

The project site is located within the broader boundary of the Delhi Community Plan (hereinafter "community plan"), which was adopted by the County in 2006. An environmental impact report ("EIR") for the community plan was certified in 2006. The community plan identifies that a master plan is required as a development implementation tool to guide development of the project site consistent with the land use and development vision in the community plan for the master plan area. Based on the master plan submitted by the project applicant, the County determined that a supplemental EIR is the appropriate CEQA document for the proposed project. This determination was made pursuant to applicable portions of CEQA Guidelines sections 15162 and 15163 which read as follows:

Section 15162 (partial):

(a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
 - (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
 - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

(b) If changes to a project or its circumstances occur or new information becomes available after adoption of a negative declaration, the lead agency shall prepare a subsequent EIR if required under subdivision (a). Otherwise, the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation. Section 15163 (partial):

(a) The Lead or Responsible Agency may choose to prepare a supplement to an EIR rather than a subsequent EIR if:

- (1) Any of the conditions described in Section 15162 would require the preparation of a subsequent EIR; and
- (2) Only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.

(b) The supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised.

(c) A supplement to an EIR shall be given the same kind of notice and public review as is given to a draft EIR under Section 15087.

(d) A supplement to an EIR may be circulated by itself without recirculating the previous draft or final EIR.

(e) When the agency decides whether to approve the project, the decisionmaking body shall consider the previous EIR as revised by the supplemental EIR. A finding under Section 15091 shall be made for each significant effect shown in the previous EIR as revised.

As described in Section 4.0, Project Description, the project applicant is proposing changes to the land use designations and development intensities defined in the community plan for the Bradbury Ranch master plan area. The County determined that these changes constitute substantial changes as described in CEQA Guidelines Section 15162(a)(1) that trigger the need to prepare an EIR. Further, sixteen years have passed since the community plan EIR was certified. Since that time, significant changes in the environmental setting, regulatory setting for assessing environmental impacts under CEQA, and changes to the CEQA Guidelines have occurred. Examples include changes in biological resources conditions; changes in thresholds for assessing air quality impacts; consideration of greenhouse gas emissions, vehicle miles traveled rather than level of service to assess transportation impacts, tribal resources, wildfire risk, and enhanced consideration of energy impacts. Given these changes and considerations, the County determined that preparing a supplement EIR pursuant to CEQA Guidelines Section 15163(a) is appropriate.

Scope of this SEIR/Environmental Checklist

As described above in CEQA Guidelines Section 15163(b), the scope of analysis in this SEIR has been defined based on the need to supplement the community plan EIR with analysis that is sufficient to assess the environmental impacts of the proposed Bradbury Ranch master plan project. To focus the content of this SEIR on the required supplemental analysis, an initial study checklist using guidance provided in Appendix G of the CEQA Guidelines was prepared. The checklist identifies environmental topics for which the analysis in the community plan EIR is sufficient to address the environmental impacts of the proposed project, environmental topics in the community plan EIR whose analysis must be supplemented to sufficiently assess impacts of the proposed project, and new environmental topics now identified in Appendix G for which no analysis is included in the supplemental EIR and should be addressed in this SEIR. The initial study checklist is included in this SEIR as an attachment to the Notice of Preparation included in Appendix A. Also refer to Section 1.4 below regarding the Notice of Preparation process.

Based on the initial study checklist results, detailed supplemental environmental analysis is required for the following environmental topics as shown in the table of contents for this SEIR:

- Air Quality;
- Biological Resources;
- Greenhouse Gases;
- Hydrology (water supply);
- Noise;
- Transportation; and
- Utilities (wastewater treatment capacity/construction impacts).

Section 12.0, Applicable Delhi Community Plan EIR Mitigation Measures, in this SEIR identifies mitigation measures in the form of policies, policy implementation measures, and/or mitigation measures from the community plan SEIR that are applicable to the proposed project. Section 12.0 is included to ensure that these applicable mitigations are accounted for and, along with mitigation measures in this SEIR, included in the mitigation monitoring and reporting program for the proposed project that is required pursuant to CEQA Guidelines Section 15097. Mitigation measures in the community plan EIR that address environmental impact topics that are evaluated in detail in this SEIR are not addressed in Section 12.0. The analysis in this SEIR supplements and updates the analysis conducted in the SEIR, and includes mitigation that replaces mitigation identified in the SEIR for these specific topics.

1.3 Methodology

General

This SEIR has been prepared by EMC Planning Group under contract to the County of Merced in accordance with CEQA and its implementing guidelines, using an interdisciplinary approach. The County of Merced has the discretionary authority to review and approve the proposed project. This SEIR is an informational document that is intended to inform the decision makers and their constituents, as well as responsible and trustee agencies of the environmental impacts of the proposed project and to identify feasible mitigation measures that would avoid or reduce the severity of the impacts. The lead agency is required to consider the information contained in this SEIR prior to taking any discretionary action to approve the proposed project.

This SEIR has been prepared using available information from private and public sources noted herein, as well as information generated through field investigation by EMC Planning Group and other technical experts.

The purpose of an EIR is to identify a project's significant environmental effects, to indicate the manner in which those significant effects can be mitigated or avoided, and to identify alternatives to the proposed project.

An EIR is an objective public disclosure document that takes no position on the merits of the proposed project. Therefore, the findings of this SEIR do not advocate a position "for" or "against" the proposed project. Instead, the SEIR provides information on which decisions about the proposed project can be based. This SEIR has been prepared according to professional standards and in conformance with legal requirements.

Emphasis

This SEIR focuses on the significant effects on the environment in accordance with CEQA Guidelines section 15143. The significant effects are discussed with emphasis in proportion to their severity and probability of occurrence.

Forecasting

In accordance with CEQA Guidelines section 15144, preparing this SEIR necessarily involved some degree of forecasting. While foreseeing the unforeseeable is not possible, the report preparers and technical experts used best available efforts to find out and disclose all that it reasonably can.

Speculation

If, after thorough investigation, the report preparers in consultation with the lead agency determined that a particular impact is too speculative for evaluation, the conclusion is noted and the issue is not discussed further (CEQA Guidelines section 15145).

Degree of Specificity

In accordance with CEQA Guidelines section 15146, the degree of specificity in this SEIR corresponds to the degree of specificity involved in the proposed project. An EIR on a well-defined proposed development project will be more detailed than will be an EIR on policy or regulatory document (e.g., land use plan, specific plan, or zoning ordinance) where the resulting physical environmental changes cannot yet be precisely identified. The latter is the case for this SEIR, in that the proposed master plan is a land use plan rather than a specific development project. The applicant is not requesting approval for individual development projects within the master plan boundary at this time. Consequently, this SEIR focuses on secondary effects from implementing the proposed master plan and is not as detailed as would be an EIR on a future specific individual project.

Technical Detail

The information contained in this SEIR includes summarized technical data, maps, plans, diagrams, and similar relevant information sufficient to permit assessment of significant environmental impacts by reviewing agencies and members of the public, pursuant to CEQA Guidelines section 15147. Highly technical and specialized analysis and data is included in appendices to the main body of the SEIR.

Citation

In accordance with CEQA Guidelines section 15148, the SEIR incorporates information from many sources including engineering reports and scientific documents relating to environmental features. If the document was prepared specifically for the proposed project, the document is included in the technical appendices discussed above. Documents that were not prepared specifically for the proposed project, but contain information relevant to the environmental analysis of the proposed project, are cited but not included. Page numbers of cited documents are provided where appropriate.

1.4 EIR Process

There are several steps required in an EIR process. The major steps are briefly discussed below.

Notice of Preparation

CEQA Guidelines section 15082 describes the purpose, content and process for preparing, circulating and facilitating early public and public agency input on the scope of an EIR. CEQA Guidelines section 15375 defines a notice of preparation as:

...a brief notice sent by the Lead Agency to notify the Responsible Agencies, Trustee Agencies, the Office of Planning and Research, and involved federal agencies that the Lead Agency plans to prepare an EIR for the project. The purpose of the notice is to solicit guidance from those agencies as to the scope and content of the environmental information to be included in the EIR.

A notice of preparation (NOP) was prepared for the proposed project and circulated for 30 days from April 6, 2022 to May 5, 2022, as required by CEQA. An environmental checklist was attached to the NOP as a basis to focus the environmental topics to be included in the SEIR for detailed analysis. The NOP and checklist, as well as comments received from agencies, organizations, and private individuals are included in Appendix A.

Written responses to the NOP were received from the following:

- 1. San Joaquin Valley Air Pollution Control District;
- 2. California Department of Fish and Wildlife;
- 3. California Native American Heritage Commission;

- 4. California Department of Toxic Substances Control; and
- 5. City of Turlock.

Responses regarding environmental topics (air quality and biological resources) that are evaluated in the body of this SEIR and that are germane to the proposed project are summarized at the beginning of these respective sections of the SEIR. Environmental topics not addressed in the body of this EIR (cultural resources and hazardous materials) are addressed in the initial study checklist included in Appendix A. One comment from the California Department of Toxic Substances Control regarding evaluation of lead contamination of soils adjacent to high volume transportation routes is not addressed in the environmental checklist. This issue was not investigated because the project site is set back from the edge of State Route 99 by about 125 feet. Lead contamination is typically only of significant concern along the immediate margins of such transportation routes (California Department of Transportation 2016, p. 2). The City of Turlock had no responses to the NOP.

Draft EIR

Contents

An informational document which will inform public agency decision makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency is required to consider the information in a draft EIR along with other information which may be presented to the agency. CEQA Guidelines Article 9 requires an EIR to contain the following information:

- Table of Contents;
- Summary;
- Project Description;
- Environmental Setting;
- Consideration and Discussion of Environmental Impacts;
- Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects;
- Consideration and Discussion of Alternatives to the Proposed Project;
- Organization and Persons Consulted; and
- Discussion of Cumulative Impacts.

The detailed contents of this SEIR are outlined in the table of contents.

Public Review

The draft SEIR must be circulated for a 45-day public review period. All comments addressing environmental issues received on the draft SEIR will be addressed in the final EIR. CEQA

Guidelines section 15204(a) states that in reviewing a draft EIR, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters.

CEQA Guidelines section 15204(c) states that reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to section 15064, an effect shall not be considered significant in the absence of substantial evidence.

Final EIR

Contents

In accordance with CEQA Guidelines section 15132, a final will provide the following:

- List of persons, organizations, and public agencies commenting on the draft SEIR;
- Comments received on the draft EIR;
- Responses to significant environmental points raised in comments; and
- Revisions that may be necessary to the draft EIR based upon the comments and responses.

According to CEQA Guidelines section 15204(a), when responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR. The final EIR and the draft EIR constitute the entire EIR.

Certification

CEQA Guidelines section 15088 requires the lead agency to provide a written proposed response to a public agency on comments made by that public agency at least 10 days prior to certifying an EIR.

CEQA Guidelines section 15090 requires lead agencies to certify the final EIR prior to approving a project. The lead agency shall certify that the final EIR has been completed in compliance with CEQA, the final EIR was presented to the decision-making body of the lead agency and that the decision-making body reviewed and considered the information contained in the final EIR prior to approving the project, and that the final EIR reflects the lead agency's independent judgment and analysis.

Because this SEIR is supplemental to the Delhi Community Plan EIR, both this SEIR and the community plan EIR will be considered by the Merced County Board of Supervisors as part of the CEQA document certification process.

1.5 Terminology

Characterization of Impacts

This SEIR uses the following terminology to denote the significance of environmental impacts.

No Impact

"No impact" means that no change from existing conditions is expected to occur.

Adverse Impacts

A "less-than-significant impact" is an adverse impact, but would not cause a substantial adverse change in the physical environment, and no mitigation is required.

A "significant impact" or "potentially significant impact" would, or would potentially, cause a substantial adverse change in the physical environment, and mitigation is required.

A "less-than-significant impact with implementation of mitigation measures" means that the impact would cause no substantial adverse change in the physical environment if identified mitigation measures are implemented.

A "significant and unavoidable impact" would cause a substantial change in the physical environment and cannot be avoided if the project is implemented; mitigation may be recommended, but will not reduce the impact to less-than-significant levels.

Beneficial Impact

A "beneficial impact" is an impact that would result in a decrease in existing adverse conditions in the physical environment if the project is implemented.

Abbreviations and Acronyms

AB	Assembly Bill
AF	Acre Feet
AFY	Acre-Feet per Year
BEES	Building Energy Efficiency Standards
BTU	British Thermal Unit
CalEEMod	California Emissions Estimator Model

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO ₂ e	Carbon Dioxide Equivalent
DCWD	Delhi County Water District
EIR	Environmental Impact Report
EMFAC	Emissions Factor Model
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
GHG	Greenhouse Gas(es)
GPD	Gallons per Day
GSA	Groundwater Sustainability Agency
GWSP	Groundwater Sustainability Plan
kWh	Kilowatt-hour
LID	Low Impact Development
MGD	Million Gallons per Day
MT	Metric Tons
NOP	Notice of Preparation
NO _X	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
\mathbf{PM}_{10}	Suspended Particulate Matter 10 micrometers or less
PM _{2.5}	Fine Particulate Matter 2.5 micrometers or less
ppm	Parts per Million

PD	Planned Development
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SEIR	Supplemental Environmental Impact Report
SF	Square Feet
SGMA	Sustainable Groundwater Management Act
SO _x	Sulfur Oxides
SGMA	Sustainable Groundwater Management Act
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TID	Turlock Irrigation District
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WSA	Water Supply Assessment

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2.0 Summary

2.1 CEQA Requirements

CEQA Guidelines Section 15123 requires an EIR to contain a brief summary of the proposed project and its consequences. This summary identifies each significant effect and the proposed mitigation measures; areas of controversy known to the lead agency; and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

A brief summary of the project description is also provided.

2.2 Proposed Project Summary

The applicant is requesting approval of a general plan amendment to modify the land use designations in the community plan that apply to the Bradbury Master Plan ("Bradbury master plan") area as illustrated in the community plan. The primary proposed changes are to eliminate the Business Park use, reduce the size of the area designated Medium Density Residential, and increase the size of the area designated Low Density Residential. Table 4-1, Proposed Bradbury Master Plan Development Capacity, summarizes how the proposed land use changes would affect projected development capacity.

The applicant is not proposing amendments to community plan policies, guidelines, or development standards. Future individual projects proposed within the master plan boundary would, therefore, be developed consistent with existing community plan guidance. A zoning amendment is required to establish a planned development district for the site. A master plan approval is also required to implement the planned development zoning as codified in Chapter 18.20.020, Planned Development Zone Approval Process, of the Merced County Zoning Code.

After County approval of the requested entitlements, applications for future individual developments within the master plan boundary would be submitted and processed. No such applications have yet been submitted and there is no known timeframe for when such submittals might occur. Future individual projects would be subject to CEQA review, with that review potentially tiering from the Delhi Community Plan Environmental Impact Report ("community plan EIR") and this supplemental EIR.

Detailed project description information is included in Section 4.0, Project Description.

2.3 Summary of Significant Impacts and Mitigation Measures

The proposed project would have a range of significant impacts. Each of the significant impacts is identified in Table 2-1, Summary of Significant Impacts and Mitigation Measures, located at the end of this Summary section. The table lists each significant impact by topic area, the level of significance of each impact, mitigation measures to avoid or substantially minimize each impact, and the level of significance of each impact after implementation of the mitigation measures.

2.4 Summary of Alternatives

This SEIR evaluates the environmental impacts of the following three alternatives to the proposed project.

- 1. The first is the no project alternative, which discusses existing conditions and allows decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.
- 2. The second alternative is a reduced scale version of the proposed project. It consists of reducing residential development capacity as a basis for reducing the project site size. The primary purpose is to avoid the significant project impact from exposure of proposed on-site sensitive residential receptors to toxic air contaminants generated by vehicle traffic on State Route 99. This alternative would also avoid the significant noise impact from exposure of on-site noise-sensitive receptors to the combined noise from traffic on State Route 99 and train travel on the adjacent UPRR track.
- 3. The third alternative increases the residential density; it consists of two components: 1) maintaining the health risk-related residential development setback from the western property line as described in Alternative 2; and 2) increasing the 5.1 units per acre density of a portion of the remaining area currently planned for low density residential, to 8.1 units per acre consistent with the medium density residential density. This change is intended to compensate for loss of 169 residential units of residential development capacity that would be eliminated from the health risk setback area.

2.5 Areas of Known Controversy

CEQA Guidelines section 15123, Summary, requires a discussion of areas of controversy known to the lead agency including issues raised by agencies and the public.

No known areas of public controversy have been identified to date. Comment letters received in response to the Notice of Preparation (included in Appendix A) identify issues the commenters suggested be evaluated in this SEIR.

2.6 Issues to be Resolved

CEQA Guidelines Section 15123 requires an EIR to discuss issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects. Merced County is not aware of any issues to be resolved; however, the Board of Supervisors will be required to consider each of the alternatives evaluated in this EIR, and make a decision whether to approved the proposed project or one of the alternatives. See Section 16.0, Alternatives, for the complete alternatives analysis.

Table 2-1	Summary of Signific	cant Impacts and Mitig	ation Measures
	2 0	1 6	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
Air Quality			
Impact 5-1. Inconsistency with Air District Ozone and Particulate Matter Attainment Plans	Significant	Mitigation Measures 5-1 through 5-3.	Less than Significant
Impact 5-2. Criteria Air Pollutant Emissions During Construction that Exceed Air District Thresholds	Significant	Mitigation Measure 5-1. Prior to County consideration of future project- specific entitlements for individual projects within the project site, each project developer shall prepare a project-specific construction emissions management plan. The construction emissions management plan shall address all phases of construction and shall be prepared by an air quality consultant deemed qualified by the County. At minimum, the construction management plan shall include a dust control plan consistent with the San Joaquin Valley Air Pollution Control District (air district) Regulation VIII, in addition to the following items:	Less than Significant
		1. Quantification of project-specific construction emissions and comparison to air district thresholds;	
		2. Identification of demonstrable emissions reduction measures that will be implemented in conformance with air district Rule 9510 and Regulation VIII for the reduction of particulate matter and ozone precursors during construction. Emissions reductions measures shall include, but not be limited to, all or a combination of the following measures:	
		 a. Utilize the cleanest available off-road construction equipment, including the latest Tier diesel engines on heavy equipment with engines greater than 25 horsepower; 	
		 b. Utilize alternative fuels and all off-road vehicles and construction equipment less than 25 horsepower; 	
		c. Electrify construction sites; and	
		 Any other construction emissions reductions measures that demonstrably reduce construction PM and NOx emissions. 	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		 The construction management plan shall be submitted to the County of Merced Community and Economic Development Director or his/her designate for review and approval; Approved construction emissions measures shall be included on all permits, construction plans and bid documents; and The approved construction management plan shall be implemented by 	
		the project contractor.	
Impact 5-3. Operational NOx and PM10 Criteria Air Pollutant Emissions that Exceed Air District Thresholds	Significant	Mitigation Measures 5-2. Prior to County consideration of future project- specific entitlements for individual projects within the project site, each project developer shall prepare a criteria pollutant emissions reduction plan. The plans shall be prepared by a qualified air quality consultant and shall include measures that demonstrably reduce operational NOx and PM10 emissions consistent with the San Joaquin Valley Air Pollution Control District Rule 9510 emissions reductions performance thresholds for operational NOx (33 Percent) and PM10 (50 percent). The criteria air pollutant emissions reduction plan shall be submitted to the County of Merced Community and Economic Development Director or his/her designate for review and approval; the approved emissions reduction measures shall be included on all permits, construction plans and bid documents. The approved criteria air pollutant emissions reduction plan shall be	Less than Significant
		implemented by the project contractor.	
Impact 5-5. Expose Sensitive Receptors to Toxic Air Contaminants During Construction	Significant	Mitigation Measure 5-3. Prior to County consideration of future project- specific entitlements for development within the project site, each project developer shall prepare a project-specific construction health risk assessment. The health risk assessment shall be prepared by an air quality consultant qualified to conduct health risk assessments consistent with the San Joaquin Valley Air Pollution Control District guidance. The health risk assessment shall be submitted to the County of Merced Community and Economic Development Director or his/her designate for review and approval. If the assessment results find that exposures to construction emissions	Less than Significant

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		If the assessment identifies that exposures would exceed the air district standards, the developer shall prepare a Construction Emissions Reduction Plan that identifies demonstrated emissions reduction measures to reduce emissions and associated health risks below the standards. The Construction Emissions Reduction Plan shall be submitted to the County of Merced Community and Economic Development Director for review and approval. The plan shall include one or a combination of the following measures and shall be implemented by the project contractor during all phases of construction:	
		a. Off-road equipment (more than 25 horsepower) and on on-road haul trucks to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) shall achieve appropriate project wide fleet-average NOx and PM10/PM2.5 reductions, such that emissions do not exceed SJVAPCD significance thresholds. Acceptable options for reducing emissions include the use of late model engines (e.g., engines meeting U.S. EPA Tier 4 standards), low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.	
		 b. Provide line power during the early phases of construction to minimize the use of diesel-powered stationary equipment, such as generators. c. All on-road HDDT heavy-duty trucks with a gross vehicle weight rating of 33,000 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks concrete trucks) shall be model year 2010 or newer. 	
Impact 5-7. Expose New On- Site Sensitive Receptors to New and Existing Sources of Toxic Air Contaminants	Significant	 d. Phase construction activities to reduce daily emissions. Mitigation Measure 5-4. Developers of individual residential projects or other projects that include sensitive receptors shall reduce cancer risk exposures from toxic air contaminants generated by traffic on State Highway 99 and train traffic on the UPRR using the following methods: 	Less than Significant
		a. MERV13 filtration systems shall be installed in all residential buildings or other buildings housing sensitive receptors that are planned within the 20 cases per million contour; with the possible exception of sensitive receptors identified in item "b";	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		b. MERV16 filtration systems shall be installed on all residential buildings or other buildings housing sensitive receptors that are planned in areas where increased cancer risk is not reduced to less than 20 cases per million with incorporation of MERV13 filtration systems; and	
		c. No residential development or other land uses that include sensitive receptors shall be permitted where use of MERV13 and MERV16 filtration systems does not reduce cancer risk to less than 20 cases per million.	
		Prior to issuance of building permits for future individual residential projects or other use types that include sensitive receptors, each developer shall identify the buildings required to be outfitted with MERV13- or MERV16-rated filtration systems on a unit unit-by-unit basis, with individual air intake and exhaust ducts ventilating each unit separately, or through a centralized building ventilation system, as needed. Each developer shall provide evidence from an air quality specialist qualified in dispersion modeling that exposures to TACs are reduced by 80 and 90 percent such that cancer risk is reduced to less than 20 cases per million. The evidence shall be verified by the Community and Economic Development Department Director/Director's Designee prior to issuance of building permits.	
		Mitigation Measure 5-5. Each project developer required to implement mitigation measure AQ-4 shall prepare and implement an ongoing maintenance plan for buildings required to be fitted with air filtration systems per mitigation measures AQ-4. The maintenance plan shall be included in the covenants, codes, and restrictions for all such projects; development agreement; or other mechanism deemed appropriate by the County. The maintenance agreement shall: 1) require cleaning, maintenance, and monitoring of the affected buildings for air flow leaks, 2) include assurance that new owners or tenants are provided information on the ventilation system, and 3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed. The ongoing maintenance plan is subject to the review and approval of the Community and Economic Development Department Director.	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
Biological Resources			
Impact 6-2. Potential Adverse Effect on Special-Status Wildlife Species (American Badger)	Significant	Mitigation Measure 6-2a. Prior to ground disturbing activities for future individual projects within the project site or the off-site improvement areas, a qualified biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of special-status species potentially occurring in the project vicinity, including, but not limited to, American badger, San Joaquin kit fox, coast horned lizard, Northern California legless lizard, burrowing owl, and nesting birds and raptors. Their habitats, general measures that are being implemented to conserve species as they relate to the project, and the boundaries within which construction activities will occur will be explained. Informational handouts with photographs clearly illustrating the species' appearances shall be used in the training session. All new construction personnel shall undergo this mandatory environmental awareness training. The qualified biologist will train biological monitors selected from the construction crew by the construction contractor (typically the project foreman). Before the start of work each day, the monitor will check for animals under any equipment such as vehicles and stored pipes within active construction zones. The monitor will also check all excavated steep-walled holes or trenches greater than one foot deep for trapped animals. If a special-status species is observed within an active construction zone, the qualified biologist will be notified immediately and all work within 50 feet of the individual will be halted and all equipment turned off until the individual has left the construction area.	Less than Significant
		Individual project developers shall submit evidence of completion of this training to the Merced County Community and Economic Development Department prior to initiation of ground disturbing activities.	
		Mitigation Measure 6-2b. Not more than 14 days prior to the commencement of ground-disturbing activities, a qualified wildlife biologist shall conduct surveys of the grassland habitat on the project site or the off-site improvement areas to identify any potential American badger burrows/dens. If the survey results are negative (i.e., no badger dens observed), a letter report confirming absence will be prepared and	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		submitted to the Merced County Community and Economic Development Department and no further mitigation is required.	
		If the results are positive (badger dens are observed), the qualified biologist shall determine if the dens are active by installing a game camera for 3 days and 3 nights to determine if the den is in use.	
		a) If the biologist determines that a den may be active, coordination with the CDFW shall be undertaken to develop a suitable strategy to avoid impacts to American badger. The strategy may include the following: the biologist shall install a one-way door in the den opening and continue use of the game camera. Once the camera captures the individual exiting the one-way door, the den can be excavated with hand tools to prevent badgers from reusing them. If the biologist determines that the den is a maternity den, construction activities shall be delayed during the maternity season (February to August), or until the badgers leave the den on their own accord or the biologist determines that the den is no longer in use.	
		b) If the game camera does not capture an individual entering/exiting the den, the den can be excavated with hand tools to prevent badgers from reusing them.	
		After dens have been excavated and the absence of American badger confirmed, a letter report will be prepared and submitted to the Merced County Community and Economic Development Department.	
Impact 6-3. Potential Adverse Effect on Special-Status Wildlife Species (San Joaquin Kit Fox)	Significant	Mitigation Measure 6-3. The U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011) shall be implemented prior to initiation of and during any construction activity on the project site or the off-site improvement areas to avoid unintended take of individual San Joaquin kit foxes.	Less than Significant
		Preconstruction/pre-activity surveys for San Joaquin kit fox shall be conducted no less than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity that may impact San Joaquin kit fox. The surveys shall include all work areas and a minimum 200-foot buffer of the project site or off-site improvement areas. The preconstruction surveys shall identify kit fox habitat features on the project site, evaluate use by kit fox and, if possible, assess the potential	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		impacts of the proposed activity. The status of all dens shall be determined and mapped. If a natal/pupping den is discovered within the project area or within 200 feet of the project boundary or off-site improvement areas, the applicant shall consult with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service to establish an appropriate avoidance buffer. The avoidance buffer shall be maintained until such time as the burrow is no longer active and/or an incidental take permit is determined to be required and is obtained.	
		 a. Project-related vehicles shall observe a 20-mph speed limit in all project areas; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction shall be minimized. Off-road traffic outside of designated project area shall be prohibited. 	
		b. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 11 of the Construction and Operational Requirements in the Standardized Recommendations must be followed.	
		c. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		 d. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site. e. No firearms shall be allowed on the project site during construction activities. f. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on site during construction activities. g. Use of rodenticides and herbicides on the project site during construction shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service. If rodent control must be conducted, zinc phosphide shall be used because of proven lower risk to kit fox 	
		 h. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape. i. Any contractor, employee, or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to the Merced County Community and Economic Development Department, who will contact the CDFW and USFWS as needed. 	
Impact 6-4. Potential Adverse Effect on Special-Status Bat Species (Hoary Bat, Pallid Bat, Townsend's Big-Eared Bat, Western Red Bat)	Significant	Mitigation Measure 6-4. Approximately 15 days prior to tree removal, building demolition, or other construction activities, developers of individual projects within the project site or off-site improvement areas shall retain a qualified biologist to conduct a habitat assessment for bats and potential roosting sites in buildings and trees to be removed, in buildings and trees within 50 feet of the development footprint, and surrounding structures situated within 50 feet of disturbance activities by the project. Bats potentially roosting on the exteriors of buildings on the project site may be disturbed by construction activities. Bats that roost in buildings are usually in structural voids, the spaces between the exterior and interior envelopes	Less than Significant

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		of a building. Bats enter voids through openings on the exterior of buildings. A colony may remain unnoticed unless someone sees, hears, or smells them. In the event that construction activities are suspended for 15 consecutive days or longer, including the time period between development activities at each respective lot or parcel, these surveys shall be repeated. These surveys shall include a visual inspection of potential roosting features (bats need not be present) and a search for presence of guano within the project site, construction access routes, and 50 feet around these areas. Cavities, crevices, exfoliating bark, and bark fissures that could provide suitable potential nest or roost habitat for bats shall be surveyed. Assumptions can be made on what species is present due to observed visual characteristics along with habitat use, or the bats can be identified to the species level with the use of a bat echolocation detector such as an "Anabat" unit. Potential roosting features found during the survey shall be flagged or marked. Locations off the site to which access is not available may be surveyed from within the site or from public areas.	
		If no roosting sites or bats are found, a letter report confirming absence shall be submitted by the biologist to the Merced County Community and Economic Development Department and no further mitigation is required.	
		If bats or roosting sites are found, a letter report and supplemental documents shall be provided by the biologist to the Merced County Community and Economic Development Department prior to ground disturbance activities and the following monitoring, exclusion, and habitat replacement measures shall be implemented:	
		a. If bats are found roosting outside of the nursery season (May 1 through October 1), they shall be evicted as described under (b) below. If bats are found roosting during the nursery season, they shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of the roost bat pups, if possible, or by monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is determined to not be a maternal roost, then the bats shall be evicted as described under (b) below. Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost is present, a 50-foot	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		buffer zone (or different size if determined in consultation with the California Department of Fish and Wildlife) shall be established around the roosting site within which no construction activities including tree removal or structure disturbance shall occur until after the nursery season. b. If a non-breeding bat hibernaculum is found in a tree or snag scheduled for removal or on any structures within 50 feet of project disturbance activities, the individuals shall be safely evicted, under the direction of a qualified bat biologist. If pre-construction surveys determine that there are bats present in any trees or structures to be removed, exclusion structures (e.g., one-way doors or similar methods) shall be installed by a qualified biologist. The exclusion structures shall not be placed until the time of year in which young are able to fly, outside of the nursery season. Information on placement of exclusion structures shall be provided to the CDFW prior to construction. If needed, other removal methods could include: carefully opening the roosting area in a tree or snag by hand to expose the cavity and opening doors/windows on structures, or creating openings in walls to allow light into the structures. Removal of any trees or snags and disturbance within 50 feet of any structures shall be provided between initial roost eviction disturbance and tree removal/disturbance activities). This action will allow bats to leave during dark hours, which increases their chance of finding new roosts with a minimum of potential predation.	
Impact 6-5. Potential Adverse Effect on Special-Status Wildlife Species (Coast Horned Lizard and Northern California Legless Lizard)	Significant	Mitigation Measure 6-5. Individual project developers will retain a biologist qualified in herpetology to conduct preconstruction surveys for coast horned lizard and Northern California legless lizard. Preconstruction surveys will be conducted within impact areas at the project site or off-site improvement areas no more than 48 hours prior to disturbance of any suitable habitat for these species as determined by the qualified biologist. Surveys will utilize hand search methods within impact areas where these species are expected to be found (i.e., under shrubs, other vegetation, or debris on sandy soils). Any individuals located during the surveys will be safely relocated to suitable habitat outside of the impact areas. In coordination with the CDFW, as needed, the qualified biologist will be at the project site to recover any coast horned lizards or Northern California legless lizards that may be excavated/unearthed during initial ground	Less than Significant

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation						
		disturbance and vegetation removal activities. If the animals are in good health, they will be immediately relocated to a designated release site outside of the work area. If they are injured, the animals will be released to a CDFW-approved rehabilitation specialist until they are in a condition to be released into the designated release site.							
Impact 6-6. Potential Adverse Effect on Special-Status Wildlife Species (Burrowing Owl)	Significant	Mitigation Measure 6-6. To avoid/minimize impacts to burrowing owls potentially occurring within the project site or off-site improvement areas, individual project developers shall retain a biologist qualified in ornithology to conduct surveys for burrowing owl. The approved biologist shall conduct a two-visit (i.e., morning and evening) presence/absence survey at areas of suitable habitat on and adjacent to the project site boundary no less than 14 days prior to the start of construction or ground disturbance activities. Surveys shall be conducted according to the methods for take avoidance described in the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) and the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no burrowing owls are found, a letter report confirming absence will be prepared and submitted to the Merced County Community and Economic Development Department and no further mitigation is required. Because burrowing owls occupy habitat year-round, seasonal no-disturbance buffers, as outlined in the Burrowing Owl Consortium 1993) and the Staff Report on Burrowing Owl Mitigation (CDFW 2012), shall be in place around occupied habitat prior to and during any ground disturbance activities. The following table includes buffer areas based on the time of year and level of disturbance (CDFW 2012), unless a qualified biologist approved by the CDFW verifies through non-invasive measures that either: 1) birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.	Less than Significant						
Significant Impact	Significance Level without Mitigation		Mitigation Measure(s)					Significance Level after Mitigation	
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		collapse burrowi be impa conduct If surve consulta develop absence prepare Develop	collapsed burrow to one constructed artificial burrow (1:1). Evicted burrowing owls may attempt to colonize or re-colonize an area that would be impacted, thus ongoing surveillance during project activities shall be conducted at a rate sufficient to detect burrowing owls if they return. If surveys locate occupied burrows in or near construction areas, consultation with the CDFW shall occur to interpret survey results and develop a project-specific avoidance and minimization approach. Once the absence of burrowing owl has been confirmed, a letter report will be prepared and submitted to the Merced County Community and Economic Development Department.						
		ſ	LocationTime of YearLevel of Disturbance Buffers (meters)						
					Low	Med	High		
			Nesting Sites	April 1 – Aug 15	200 m	500 m	500 m		
			Nesting Sites	Aug 16 – Oct 15	200 m	200 m	500 m		
			Nesting Sites	Oct 16 – Mar 31	50 m	100 m	500 m		
Impact 6-7. Potential Adverse Effect on Special-Status Wildlife Species (Swainson's Hawk)	Significant	Mitigati by indiv hawk ar a. Tree season b. To av and oth improve surveys for cons	ion Measur idual projec nd other rap and vegeta for raptors of void, minimi er raptors n ement areas and identifi struction act	e 6-7a. The fo t developers to tors: (September 16 ze, and mitiga esting on or a s, retain a qual y active nests ivities conduct	Ilowing me o avoid los hall be con S-January te potentia djacent to t ified biolog on and witi ed during t	asures shall s of or harm npleted durir 31). I impacts on he project si ist to conduc hin 0.5 mile o the breeding	be implement to Swainson' ng the nonbre Swainson's h te or off-site of preconstruct of the project season	nted s eding nawk ction site	Less than Significant

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		(February 1–September 15). The surveys shall be conducted before the initiation of ground disturbing activities and no less than 14 days and no more than 30 days before the beginning of construction. Guidelines, provided in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000) or updated, current guidance, shall be followed for surveys for Swainson's hawk. If no nests are found, a report documenting the results of the survey shall be submitted to the Merced County Community and Economic Development Department and no further mitigation will be required.	
		c. Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with California Department of Fish and Wildlife, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. California Department of Fish and Wildlife guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers for Swainson's hawk nests, but the size of the buffer may be decreased if a qualified biologist, in consultation with California Department of Fish and Wildlife, determine that such an adjustment would not be likely to adversely affect the nest.	
		The appropriate no-disturbance buffer for other raptor nests (i.e., species other than Swainson's hawk) shall be determined by a qualified biologist based on site-specific conditions, the species of nesting bird, nature of the project activity, visibility of the disturbance from the nest site, and other relevant circumstances.	
		Monitoring of all active raptor nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		Mitigation Measure 6-7b. If the preconstruction surveys, a review of the California Natural Diversity Database, or other survey effort indicate there is an active nest within ten miles of the project site, the following measures shall be implemented to mitigate for the loss of Swainson's hawk foraging habitat:	
		a. Prior to ground-disturbing activities, suitable Swainson's hawk foraging habitat shall be preserved to ensure replacement of foraging habitat lost as a result of the project, as determined by a qualified biologist, in consultation with California Department of Fish and Wildlife.	
		b. The habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within Merced County. The mitigation ratio shall be consistent with the guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California (CDFG 1994). These guidelines specify that the mitigation ratio shall be 1:1 if there is an active nest within one mile of the project site, 0.75:1 if there is an active nest within five miles but greater than one mile away, and 0.5:1 if there is an active nest within 10 miles but greater than five miles away. If there is an active nest within one mile of the project site, the mitigation ratio can be reduced to 0.5:1 if all of the mitigation land can be actively managed for prey production. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area within Merced County.	
Impact 6-8. Potential Adverse Effect on Nesting Migratory Birds (Including Loggerhead Shrike) and Raptors	Significant	Mitigation Measure 6-8. To avoid impacts to nesting birds during the nesting season (February 1 through September 15), construction activities within or adjacent to the project site boundary or off-site improvement areas that include any vegetation removal or ground disturbance (such as grading or grubbing) shall be conducted between September 16 and January 31, which is outside of the bird nesting season. If construction activities must commence during the bird nesting season, then a qualified biologist shall conduct a pre-construction survey for nesting birds to ensure that no nests would be disturbed during project construction. a. Two surveys for active nests of such birds shall occur within 10 days prior to start of construction, with the second survey conducted within 48	Less than Significant

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		hours prior to start of construction. Appropriate minimum survey radius surrounding the work area is typically 250 feet for passerines, 500 feet for smaller raptors, and 1,000 feet for larger raptors. Surveys shall be conducted at the appropriate times of day to observe nesting activities. Individual project developers shall submit evidence of completion of the preconstruction survey to the Merced County Community and Economic Development Department prior to initiation of ground disturbing activities. b. If the qualified biologist documents active nests within individual project site boundaries, an appropriate buffer between each nest and active construction shall be established. The buffer shall be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist shall conduct baseline monitoring of each nest to characterize "normal" bird behavior and establish a buffer distance, which allows the birds to exhibit normal behavior. The qualified biologist shall monitor the nesting birds daily during construction activities and increase the buffer if birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist shall have the authority to cease all construction work in the area until the young have fledged and the nest is no longer active. This measure shall be implemented by the individual project developers prior to initiation of ground disturbing activities.	
Greenhouse Gas Emissions	I		
Impact 7-1. Generate Greenhouse Gas Emissions	Significant	Mitigation Measure 7.1. If the County has not adopted a qualified climate action plan prior to the County's consideration of each future project-specific entitlement for development within the project site, individual project developers shall prepare a GHG Reduction Plan for their respective projects. Each GHG Reduction Plan shall include GHG reduction measures that reduce GHG emissions from each individual project to the equivalent of 1.44 MT CO2e per service population per year. The GHG Reduction plan should be prepared a qualified air quality/GHG professional.	Less than Significant

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		The service populations threshold of significance is based on an assumed buildout year of 2045 for all individual projects. A higher threshold of significance may be warranted for projects that build out prior to 2045. For such projects, individual project developers may provide substantial evidence that a higher threshold of significance is warranted. The evidence shall be based on the threshold of significance determination methodology utilized in this EIR. Any proposed change in the threshold of significance determination methodology shall be subject to review and approval of the Merced County Planning Director.	
		Each GHG Reduction Plan shall list the planned reduction measures, identify reductions associated with each, and provide evidence supporting the level of reduction calculated for each. All measures within the control of individual project applicants shall be implemented and operational prior to occupancy of the associated project.	
		Each GHG Reduction Plan shall prioritize on-site GHG reduction design features and/or other project specific measures that are within the control of individual developers. If on-site measures are insufficient to achieve required reductions, direct investments in off-site GHG reduction activities/programs in the vicinity may be made. Examples of direct investments include building retrofit programs that pay for cool roofs, solar panels, solar water heaters, smart meters, energy efficient lighting energy efficient windows, and insulation. Other examples include financing programs for installing electric vehicle charging stations, electrifying school buses, or planting local urban forests.	
		If the GHG emissions reductions from on-site measures and/or investments in off-site reduction programs are insufficient to reduce project emissions to below the threshold of significance, the applicant may secure the reduction balance by purchasing and retiring carbon offset credits. The carbon offset credits shall meet the following performance standards:	
		a. Carbon offset credits shall be issued by a recognized, reputable and accredited registry that mandates the use of established protocols for quantifying and issuing the offset credits. Credits issued based on protocols approved by the California Air Resources Board should be	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		prioritized. Examples of such registries include the Climate Action Reserve, American Carbon Registry, and Vierra.	
		b. In order of priority, the carbon offset credits should be obtained from projects developed in local vicinity/region, the state, national, or international projects. Priority is on offset credits available through registries approved by CARB. Credits from projects developed internationally should not be used unless the applicant demonstrates with substantial evidence that sufficient carbon offsets from projects in vicinity/region, state, or U.S. are unavailable. International offsets must be quantified and issued using established protocols that are recognized in the United States and that are issued by recognized, reputable and accredited registries.	
		c. All carbon offset credits must meet the criteria of being real, quantifiable, permanent, verifiable, enforceable, and additional, consistent with the standards set forth in Health and Safety Code section 38562, subdivisions $(d)(1)$ and $(d)(2)$.	
		Individual project developers shall submit their respective GHG Reduction Plans for review and approval of the Community and Economic Development Department Director/Director's Designee prior to approval of project-specific entitlements. Implementation of the GHG reduction measures shall be made a condition of approval. If carbon offsets are proposed, applicants shall provide an executed contract or other certification to the Community and Economic Development Department Director/Director's Designee that the requisite carbon offset credits have been purchased.	
		Mitigation Measure 7-2. If the County has adopted a qualified climate action plan prior to approval of any individual future project(s), conformance of individual projects with the applicable GHG reduction measures included in the climate action plan would serve as mitigation for GHG impacts of those projects. GHG Reduction Plans as identified in mitigation measure 7-1 would not be required. To ensure conformance with the climate action plan, individual project developers shall	
		demonstrate that all applicable GHG reduction measures included in the climate plan have been incorporated into their respective project designs. Operational measures that are not physical project design features shall be	

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
		required as conditions of project approval. Conformance with the climate action plan shall be verified by the Community and Economic Development Department Director/Director's Designee prior to approval of individual future projects.	
Impact 7-2. Conflict with GHG Reduction Plans	Significant	Mitigation Measures 7-1 and 7-2.	Less than Significant
Noise			
Impact 9-3. Commercial Use Stationary Noise Sources Resulting in a Permanent Substantial Noise Increase	Significant	Mitigation Measure 9-1. The applicant shall prepare an acoustical analysis to define the site-specific potential impacts of stationary commercial noise sources. The potential for these noise sources uses to exceed applicable County noise standards at adjacent noise sensitive uses shall be identified. If significant impacts are identified, mitigation measures shall be identified to reduce impacts to less than significant by ensuring compliance with the County noise standards. Mitigation could include, but may not be limited to: site design to separate commercial uses from adjacent sensitive residential uses, building setbacks, noise equipment enclosures, etc. The acoustical analysis shall be subject to review and approval of the Community and Economic Development Department Director/Director's Designee prior to approval of entitlements for future site-specific commercial projects.	Less than Significant
Impact 9-5. Traffic Noise on Shanks Road that Affects Planned On-Site Sensitive Receptors	Significant	Mitigation Measure 9-2. Outdoor activity areas of residential units proposed within 60 feet of the centerline of Shanks Road shall be located outside the 65 dB contour along Shanks Road as identified in the Acoustical Analysis – Bradbury Ranch, Merced County/Delhi California (WJV Acoustics 2022) or by shielding such activity areas from traffic noise along Shanks Road to the satisfaction of the Community and Economic Development Department Director/Director's Designee. The 65 dB contour is located 60 feet from the centerline of Shanks Road. Implementation of this mitigation shall be verified by the Community and Economic Development Department Director/Director's Designee prior to approval of building permits for such residential units.	Less than Significant

Significant Impact	Significance Level without Mitigation	Mitigation Measure(s)	Significance Level after Mitigation
Impact 9-6. Combined State Route 99/Train Noise that Affects Planned On-Site Sensitive Receptors		Mitigation Measure 9-3. Developers of future residential projects located wholly or partially within the 65 dB Ldn noise contour for combined State Route 99 and UPRR train noise shall prepare and implement a detailed noise mitigation plan which defines the combination of noise mitigation options (soundwalls, setbacks and site design measures) to be employed to reduce noise exposure levels at outdoor activity areas to less than 65 dB Ldn. Locations and specifications for soundwalls shall be shown on tentative maps or other project-specific development plants. The noise mitigation plan and project plans shall be subject to review and approval of the Community and Economic Development Department Director/Director's Designee prior to approval of entitlements for future residential projects.	Less than Significant
SOURCE: EMC Planning Group 2023			

3.0 Environmental Setting

3.1 Project Site Setting

Project Location

The approximately 273-acre project site, known as the Bradbury Ranch, is located within the northeastern portion of the Delhi Community Plan ("community plan") boundary in unincorporated Merced County. The community plan is a component of the 2030 Merced County General Plan ("Merced County general plan"). The project site is bound by Bradbury Road on the north, Vincent Road on the east, Shanks Road on the south, and State Route 99/Union Pacific Railroad on the west. Figure 3-1, Location Map, presents the regional location of the project site. Figure 3-2, Delhi Community Plan/Bradbury Ranch Location, shows the location of the project site within the Delhi Community Plan Boundary.

Baseline/Existing Site Conditions

CEQA Guidelines Section 15125 states that an EIR "must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation [NOP] is published." Section 15125 states that this approach "normally constitute[s] the baseline physical conditions by which a lead agency determines whether an impact is significant."

This supplemental EIR evaluates impacts against existing conditions, which are generally conditions existing at the time of the release of the NOP (March 2022). It was determined that a comparison to current, existing baseline conditions would provide the most relevant information for the public, responsible agencies and Town decisionmakers.

Figure 3-3, Aerial Photograph, shows existing site features and uses, as well as adjacent features and uses. Several residences are located within the site boundary, which is otherwise undeveloped and primarily in agricultural use. Other features include unimproved farm roads, agricultural drainage ditches, and agricultural irrigation canals.

Surrounding Land Use and Vicinity/Region Setting Surrounding Land Uses

Land that is in agricultural production borders the site on the north, east, and south. Several singlefamily homes are located along the northern side of Bradbury Road opposite the site. Significant infrastructure features include State Route 99 and the Union Pacific Railroad, both of which are adjacent to the site on the west, and a Turlock Irrigation District canal that traverses the northwest site boundary.

Vicinity and Regional Setting

As previously noted, the project site is within the northern boundary of the community of Delhi. Delhi is predominantly a residential community, with a population of approximately 12,500. The community includes a mix of other land use types, including commercial uses that are located in the center of the community. The community is predominantly surrounded by agricultural uses that include farmland, dairies, poultry farms and ranches. The urban development nearest to the site is about .3 miles to the southwest.

State Route 99 is the dominant infrastructure feature in the area. It, along with the Union Pacific Railroad line, traverse through the center of the community. Three interchanges with the highway are located in Delhi. The Bradbury Road and Shanks Road interchanges provide direct access to the project site.

Delhi is set within the regional setting of Merced County and the broader Central Valley, along the main transportation spine of State Route 99. Merced County is dominated by agricultural development and associated agriculture related industries. Land in all four directions is predominantly in agricultural use. The nearest incorporated cities are Turlock, about five miles to the north, and Livingston, about four miles to the south, both on State Route 99. The City of Merced, the largest city in the area, is about 18 miles to the south, also along the highway.

3.2 Delhi Community Plan/Merced County General Plan Existing Land Use and Zoning

The proposed project involves land use changes that must be considered by the County. Therefore, it is important to understand the current land use context in which the project is being proposed. Figure 3-4, Existing Delhi Community Plan Land Use Designations – Bradbury Ranch Master Plan Area, shows the current land use designations. As can be seen, the site is planned for a combination of Low Density Residential, Medium Density Residential, Neighborhood Commercial, and Business Park uses. New elementary and middle schools, and neighborhood/regional parks are also planned. The acreages and development capacities for these use types are described in Table 3-1, Bradbury Master Plan Area Land Use and Development Capacity.



Source: ESRI 2014

Figure 3-1 Location Map







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Figure 3-3 Aerial Photograph



Land Use	Community Plan Development Capacity ¹
Low Density Residential ³ Acres ⁴ Dwelling Units	105 590
Medium Density Residential ⁵ Acres Dwelling Units	41 279
Neighborhood Commercial Acres Building Square Feet	10 136,680
Business Park Acres Building Square Feet	50 457,380
Schools Acres School Types	30 Elementary School Middle School
Parks/Detention/Paths Acres Park Types	25 Two Neighborhood Parks One Community Park
	Totals
Acres	261
Dwelling Units	869
Building Square Feet	594,060

Table 3-1 Bradbury Master Plan Area Land Use and Development Capacity

SOURCE: Merced County 2005 NOTES:

1. From Table 3.2, Master and Special Plan Areas Land Use Summary of the Delhi Community Plan

The Low Density Residential designation allows residential development at a density of 3.5 to 8.0 units/acre. The Medium Density Residential designation allows a variety of detached and attached single-family, and multi-family (e.g., duplexes, triplexes, patio / courtyard homes, town homes) residential uses. Densities may range from a minimum of 8.1 to a maximum of 15.0 dwelling units / acre. The Neighborhood Commercial designation is intended for neighborhood retail and service uses such as a supermarket, pharmacy, bakery, dry cleaner, barber / beauty shop, restaurants, business and professional offices, and other uses that generally serve nearby residential areas and carry products or offer services regularly used by residents. The Business Park designation is intended for clean, non-noxious uses such as professional offices, research and development facilities, warehouse and distribution centers, mini storage, light manufacturing and fabrication (limited to indoor activity), and other similar uses located in a low intensity, landscaped setting with high design and development standards. The Park designation identifies the conceptual locations for both Neighborhood Parks and Community Parks. The exact sizes and locations are to be

determined at the master plan and subdivision map stages, but must be consistent with park standards identified in the community plan. The two school locations are also conceptual, but were established to meet the need for the Delhi Union School District to acquire new school sites to meet demand of a growing Delhi community population.

The site is currently zoned A-1, General Agriculture. This zoning district allows for intensive farming operations dependent on higher quality soils, water availability, relatively flat topography, and agricultural commercial and/or industrial uses dependent on proximity to urban areas or location in sparsely populated low traffic areas.

Project Consistency with Policies that Mitigate Environmental Impacts

This section includes an evaluation of project consistency with Delhi Community Plan and Merced County general policies that serve as mitigation for environmental effects. The purpose is to determine whether or not the proposed project conflicts with such policies and/or their implementation measures, and if so, whether such conflicts could otherwise result in environmental impacts. Table 3-2, Delhi Community Plan and Merced County General Plan Policy Consistency Review, shows the results. No conflicts with the subject policies/implementation measures were identified for policies that are germane at the general plan (land use) amendment level of analysis.

Project consistency with other relevant plans such as the Air Quality Management Plan, Regional Transportation Plan Sustainable Communities Strategy for Merced County, and the Turlock Subbasin Groundwater Sustainability Plan is evaluated in individual environmental topic-specific sections of this EIR.

Table 3-2	Delhi Community Plan	n and Merced County Genera	l Plan Policy Consistency Review
		<i>.</i>	<i>.</i>

Delhi Community Plan Policies	Discussion	Consistent?
Land Use		
Policy LU 4.1: Establish a land use pattern that promotes compatible land uses and provides an effective transition between the built environment and agricultural uses along the periphery of the Community.	The proposed project includes land uses identified in the community plan for the project site. Those land uses and their compatibility with adjacent agricultural uses was considered during the community plan development process and found to be acceptable. Low density residential and non-residential uses are located along the project frontages with agricultural uses for this purpose	Yes
Policy LU 4.2: Establish distinct physical buffers such as streets or canals along the edge of the community to define urban and agricultural edges.	The proposed land use changes do not alter the existing roadway (Bradbury Road and Vincent Road) or canal (TID canal) that currently buffer the site form adjacent agricultural uses.	Yes
Policy LU 4.3: Provide adequate setbacks and / or physical landscape screens between non-residential development and adjacent agricultural land uses outside the Community Plan boundary.	The proposed project land use plan identifies agricultural setbacks from adjacent agricultural and diary uses consistent with County development standards. Future habitable development would be prohibited within the buffer areas.	Yes
Circulation		
Policy CI 1.1: Implementation Measures CI 1.1.I to CI 1.1.O: These measures require implementing pedestrian connections within individual sites and connectivity to adjacent parcels designed for urban use	All project site frontages and internal streets will be constructed to standards contained in the community plan, which include pedestrian facilities. Planned pedestrian connections are described and illustrated in the project description.	Yes
Policy CI 2.1, Implementation Measures CI 3.1.d and e: These measures require Class I separated bike paths along or adjacent to Turlock Irrigation District Lateral #6, and along Bradbury Road, Vincent Road, Flower Street and Swanson Road, and Class II bike lanes along all major and minor collectors, except for those planned to have Class I bicycle lanes.	The proposed project includes Class I and Class II bike lanes consistent with this policy as described and illustrated in the project description.	Yes
Policy CI 3.1: Establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the Community.	See Policies Cl 1.1 and 2.1, above.	Yes
Policy CI 5.1: Development adjacent to minor and major collectors shall coordinate with Merced County Transit to identify appropriate locations for public transit improvements (i.e., bus pullouts, seating shelters) to encourage public transit use.	The need for and precise locations of transit facilities will be identified as part of the planning and development review processes for individual future projects within the site.	Yes

Delhi Community Plan Policies	Discussion	Consistent?
Open Space/Conservation		
Policy OS 2.1: Residential neighborhoods, commercial, and employment centers should be linked by a pedestrian / bicycle trail system to promote local non-vehicular travel.	See Policies Cl 1.1 and 2.1, above.	Yes
Policy OS 3.1: Establish land use designations that provide a transition between the urban and surrounding agricultural environment on the fringes of the Community.	The proposed land use plan includes setbacks to residential uses from adjacent agricultural uses.	Yes
Policy OS 3.2: Mitigation shall be required to preserve important farmland around Delhi and protect agriculture within Merced County. (EM)	The initial study checklist included in Appendix A of this SEIR addresses impacts and mitigation for conversion of agricultural land to non-agricultural uses.	Yes
Policy OS 4.1: Survey and identify potential special status species habitat prior to development activity.	Potential biological resources impacts are identified in this EIR based on a biological resources survey conducted at the site.	Yes
Policy OS 5.1: Identify, inventory and register historic sites, buildings and structures. (EM)	The initial study checklist included in Appendix A of this SEIR addresses impacts and mitigation for cultural resources effects.	Yes
Policy OS 5.2: Identify, inventory and preserve archaeological and paleontological resources.	See Policy OS 5.1.	Yes
Noise		
Policy N 1.1: Residential development shall incorporate means to reduce noise levels to 65 dBA L_{dn} as mandated by the Merced County General Plan Noise Chapter policies. (EM)	A noise assessment was prepared for the project to assess noise impacts and identify mitigation measures to reduce significant impacts to less than significant. A specific noise mitigation report to address noise impacts from State Route 99/UPRR operations on new project site residents was also prepared.	Yes
Implementation Measure N.1.1.a: During the master plans tentative subdivision map, or building permit process, proponents shall submit noise studies that are needed to comply with Policy N1.1 and identify appropriate measures to screen new noise sensitive development. (EM)	See Policy N 1.1	Yes
Implementation Measure N 1.1.b: Any new noise sensitive development that occurs within the identified 65 dBA L_{dn} contour shall first provide a study of noise levels and mitigation efforts to reduce noise levels within the project site. This study shall be reviewed by the County before project approval. (EM)	See Policy N 1.1	Yes
Policy N 1.2: Noise reduction measures and buffers shall be attractively designed consistent with the Community Character and Design Chapter (Chapter 4).	See Policy N 1.1	Yes

Delhi Community Plan Policies	Discussion	
Public Services		
Policy PS 1.1: As development occurs ensure that adequate public services are provided. (EM)	Adequacy of public services, the need to construct new infrastructure and/or facilities to meet demand, and the environmental effects from constructing the infrastructure/facilities are evaluated in this SEIR.	Yes
Policy PS 3.2: Ensure that adequate new school sites are made available within the Community. (EM)	The environmental impacts of constructing and operating schools proposed within the project site to meet demands of new students generated by the project are evaluated in this SEIR to the extent feasible given the land use information for the sites.	Yes
Policy PS 4: The Community should maintain and improve County levels of standards for fire and police protection. (EM)	See Policy PS 1.1	Yes
2030 Merced County General Plan Policies	Proposed Project	Discussion
Land Use and Community Character Element		
Policy LU-1.4: Urban Communities (RDR): Continue to support compact Urban Communities through the efficient use of land to reduce conflicts with agricultural and open space areas, and minimize public service costs.	The proposed project represents urban development on a site already identified for urban development in the community plan	Yes
Policy LU-5, A.3: Growth Limitations (RDR): Limit growth in existing Urban Communities that lack public sewer and water systems to only include land use designations and densities which can be accommodated by individual septic systems and/or wells.	nit growth in existing Urban systems to only include land use nmodated by individual septicThe applicant will be required to construct sewer and water infrastructure to tie into existing systems operated by the Delhi County Water District. No impacts from use of septic systems would occur.	
Agricultural Element		
Policy AG-2.2: Agricultural Land Mitigation (RDR): Protect productive agricultural areas from conversion to non-agricultural residential uses by establishing and implementing an agricultural mitigation program that matches acres converted with farmland acres of similar quality to those converted preserved at a 1:1 ratio.	RDR): Protect productive agricultural See Community Plan Policy OS 3.2 sidential uses by establishing and sidential uses converted am that matches acres converted sidential uses converted be converted preserved at a 1:1 ratio. sidential uses	
Policy AG-3.2: Agricultural Buffer (RDR) In consultation with the MCAC, require buffers between proposed non-agricultural uses and adjacent productive agricultural operations to protect farms, dairies, and agricultural-related production facilities from conflicts with non-agricultural uses, specifically rural residences and urban area residential development.	See Community Plan Policy LU 4.3	Yes
Policy AG-3.4: Residential Buffers from Agriculture (RDR) Require a minimum 200-foot buffer between new residential development within designated urban areas and existing agricultural operations, and establish design/maintenance guidelines for developers and property owners.	See Community Plan Policy LU 4.3	Yes

Delhi Community Plan Policies	Discussion	Consistent?
Transportation and Circulation Element		
 Policy CIR-1.4: Traffic Studies (RDR/PSR) Require a traffic study to be prepared for all specific and community plans that includes, at a minimum: a) Assessment of internal circulation system needs and design of a primary traffic circulation network for the plan area; b) Demonstrate consistency with the circulation policies of the General Plan: 	A transportation analysis was prepared for the project to evaluate its vehicle miles traveled and operational effects on the existing road network. The latter is for County informational purposes, as CEQA no longer requires analysis of operational impacts.	Yes
c) Identify regional transportation infrastructure connectivity requirements; and		
 d) Identify specific traffic impacts related to the plan area and improvement measures to mitigate those impacts including the identification of proportionate impact levels for regional governments. 		
Housing Element		
Policy 7.4: The County shall encourage housing developers to utilize energy efficient, green building techniques and promote "Leadership in Energy and Environmental Design" (LEED) certified housing units in both single and multi-family residential projects.	While the project is not being proposed to meet LEED certification standards, the applicant is proposing to incorporate energy reducing measures that include no use of natural gas and exceeding CalGreen requirements for promoting electric vehicle use.	Yes
Policy 7.6: The County shall encourage the use of solar, wind, other renewable energy resources, and use of water recycling water systems for residential and other building applications.	The project must be constructed consistent with the California Building Energy Efficiency Standards, which require that new residential uses of the type proposed have net zero energy demand (in part through incorporating renewable solar energy).	Yes
Public Facilities and Services Element		
Policy PFS-3.2: Stormwater Facilities in New Development (RDR/MPSP): Require that new development in unincorporated communities includes adequate stormwater drainage systems. This includes adequate capture, transport, and detention/retention of stormwater.	The applicant has submitted a conceptual storm drainage plan. Implementation of storm water improvements to County standards will be the responsibility of future individual project developers. The impacts of constructing storm water improvements are identified in the SEIR.	Yes
Policy PFS-3.6: Retention/Detention Facility (RDR/MPSP): Encourage stormwater detention/retention project designs that minimize drainage concentrations and impervious coverage, avoid floodplain areas, are visually unobtrusive and, where feasible, provide a natural watercourse appearance and a secondary use, such as recreation.	See Policy PFS-3.2	Yes

Delhi Community Plan Policies	Discussion	Consistent?
Natural Resources Element		
Policy NR-1.9: Rural to Urban Redesignations (MPSP): Carefully consider the potential impacts on significant habitats from new development when redesignating land from a rural to an urban use.	See Community Plan Policy OS 4.1	Yes
Policy NR-1.21: Special Status Species Surveys and Mitigation (RDR/SO/IGC) Incorporate the survey standards and mitigation requirements of state and federal resource management agencies for use in the County's review processes for both private and public projects.	See Community Plan Policy OS 4.1	Yes
Recreation and Cultural Resources Element		
Policy RCR-1.3: Neighborhood, Community, and Regional Parkland Standards (RDR): Encourage a minimum of three acres of neighborhood, community, or regional parkland per each 1,000 persons in the County by:	The proposed project includes parkland acreage that meets County standards. The impacts of constructing new parks are considered in the SEIR.	Yes
a) Working with other agencies and private interests to provide for adequate neighborhood, community, and regional parkland and facilities;		
b) Actively participating in the planning of projects that have regional recreation benefits;		
 c) Encouraging and supporting local agency efforts to achieve their objectives for providing local parkland. All local providers should seek to provide at least three acres of parkland for each 1,000 persons; 		
d) Actively seeking available regional, State, and Federal grant funds for acquiring, developing, and maintaining regional parks; and		
e) Encouraging and supporting other public agencies and private groups in the development of recreation facilities that are consistent with the 2030 Merced County General Plan.		
Policy RCR-2.5: Human Remains Discovery (RDR): Require that, in the event of the discovery of human remains on any project construction site, all work in the vicinity of the find will cease and the County Coroner and Native American Heritage Commission will be notified.	Potential cultural resource impacts of constructing new development within the project site are evaluated and mitigated to less than significant as described in the initial study checklist in Appendix A of this SEIR.	Yes
Policy RCR-2.10: Tribal Consultation (RDR/MPSP/IGC) Consult with Native American tribes regarding proposed development projects and land use policy changes consistent with Planning and Zoning Law at Government Code Section 65351, and the OPR Tribal Consultation Guidelines (2005).	County staff completed the tribal consultation process for the proposed project. Offer of consultation letters were sent by the County on February 24, 2022.	Yes

Delhi Community Plan Policies	Discussion	Consistent?
Health and Safety Element		1
Policy HS-5.3: Incompatible Land Uses (RDR) Prohibit incompatible land uses near properties that produce or store hazardous waste.	The proposed land uses would not facilitate development that would be the source of significant use, storage, or transport of hazardous waste, nor are such development types located adjacent to the project site.	Yes
Policy HS-5.4: Contamination Prevention (RDR): Require new development and redevelopment proposals that have suspected or historic contamination to address hazards concerns and protect soils, surface water, and groundwater from hazardous materials contamination by conducting Phase I Environmental Site Assessments (ESA) according to the American Society for Testing and Materials (ASTM) standards and applicable Department of Toxic Substances Control (DTSC) remediation guidelines. Also, complete additional Phase II Environmental Site Assessments and soil investigations, and any identified or needed remediation when preliminary studies determine such studies are recommended.	Potential impacts related to hazardous materials conditions are addressed in the initial study checklist included in Appendix A of this SEIR. No known hazardous materials conditions exist within the project site. The community plan EIR requires Phase I Environmental Assessments for specific properties within the community plan boundary; the project site is not one of them.	Yes
Policy HS-7.12: New Project Noise Mitigation Requirements (RDR): Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development.	See Community Plan Policy N 1.1	Yes
Air Quality Element	l	
Policy AQ-2.1: Air Quality Plan Compliance (RDR): Require all development projects to comply with applicable regional air quality plans and policies.	An air quality assessment was conducted for the proposed project to evaluate its potential impacts consistent with San Joaquin Valley Air Pollution Control District guidance. Air quality impacts are identified in the SEIR and mitigation measures are proposed for significant air quality impacts.	Yes
Policy AQ-2.2: Development Review Process (RDR): Use the development review process to achieve measurable reductions in criteria pollutant, toxic air contaminants, and greenhouse gas emissions.	See Policy AQ-2.1	Yes

Delhi Community Plan Policies	Discussion	Consistent?
Policy AQ-2.3: Cumulative Impacts (RDR): Encourage the reduction of cumulative air quality impacts produced by projects that are not significant by themselves, but result in cumulatively significant impacts in combination with other development.	See Policy AQ-2.1	Yes
Policy AQ-2.4: Mitigation (RDR): Require that local and regional air quality impacts identified during CEQA review for projects reviewed and approved by the County are consistently and fairly mitigated.	See Policy AQ-2.1	Yes
Policy AQ-4.1: Decrease Vehicle Miles Traveled (RDR): Require diverse, higher- density land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled.	A vehicle miles traveled analysis was prepared for the proposed project. The impact was found to be less than significant, in part due to the mix of land used included in the proposed project.	Yes
Policy AQ-5.1: Residential Buffers (RDR): Require effective buffers between residential and other sensitive land uses, and nonresidential land uses that generate hazardous air emissions such as highways (e.g., I-5 and SR-99), trucking centers, gasoline dispensing facilities, and dry cleaners. Effective buffers shall be determined by requiring consultation with the SJVAPCD for any project that may have a health risk impact, including those projects that would otherwise appear to be exempt from CEQA requirements.	See Policy HS-5.3 A health risk assessment was conducted for the proposed project. Impacts and mitigation measures are identified in the SEIR.	Yes
Policy AQ-6.8: Voluntary Emissions Reduction Agreement (RDR/IGC): Require all project applicants, where project emissions for any criteria pollutant have been evaluated to exceed SJVAPCD significance thresholds, to consult with the SJVAPCD regarding the establishment of a Voluntary Emissions Reduction Agreement between the applicant and the SJVAPCD. Support the SJVAPCD in its efforts to fund the Emission Reduction Incentive Program.	See Policy AQ-2.1	Yes
Water Element		
Policy W-1.7: Water Sufficiency Requirement (RDR): Require new developments to prepare a detailed source water sufficiency study and water supply assessment per Title 22 and SB 610, consistent with any Integrated Regional Water Management Plan or similar water management plan. This shall include studying the effect of new development on the water supply of existing users, with public input.	A water supply assessment has been prepared for the project. Results are identified in this SEIR.	Yes

4.0 Project Description

The project applicants, RBK Development and Belgravia Land and Development, have submitted an application (PD 18-001) to Merced County for the Bradbury Master Plan planned development (hereinafter referred to as the "proposed project" or "project") for review and consideration. The Bradbury master plan boundary is within the broader Delhi Community Plan (hereinafter "community plan") boundary. The County certified an EIR for the community plan in 2006. The current project application has been submitted to request changes to land use and development capacity within the Bradbury master plan area. No applications for individual development projects within the master plan boundary have been submitted. Applications for future individual projects would be submitted after the proposed master plan land use changes are approved by the County. Future individual projects would also be subject to CEQA review.

This section describes overall project objectives, proposed land use changes, changes in projected development capacity, projected population and employment, and intended uses of the SEIR.

4.1 Project Objectives

The objectives for the preferred project include the following:

- Accommodate projected population, housing, and employment consistent with the growth strategies of the Delhi Community Plan;
- Provide a mix of land uses including shopping, restaurants, and a variety of home types, sizes, and pricing, to accommodate income levels, cultures, and races;
- Support the reduction of Medium Density Residential within the Bradbury Master Plan area to provide for larger residential lots to address the market conditions which lean toward affordable homes on larger lots. In addition, support the development of residential homes in place of Business Park to address the market conditions which do not support Business Park within the Bradbury Master Plan Area. "It is recognized that land use designations contained in the Delhi Community Plan Land Use Diagram can be blended within the Master Plan neighborhoods as long as the acres, the variety of housing densities, and public amenities in Table 3.2 have been met." (Delhi Community Plan p. 3-8);
- Provide job opportunities and neighborhood-serving commercial uses for the community;
- Adopt a plan that is consistent with policies and objectives of SB 375;

- Upgrade and expand existing infrastructure and develop new infrastructure for the Bradbury Master Plan Area to address public services such as water, sewer, and drainage necessary to support growth;
- Provide an interconnected street grid pattern that disperses traffic, eases congestion, and provides a high-quality pedestrian network and public realm that encourages convenient access to local parks and to a future school site within the Bradbury Master Plan Area;
- Design a circulation network within the Bradbury Master Plan Area that promotes a safe pedestrian and bicycling environment as contemplated by the Community Plan;
- Promote an additional school site within the Bradbury Master Plan Area to serve current and future residents. Locate the school site within the Bradbury Master Plan Area such that its location is the least disruptive to future residents in terms of traffic congestion and parking;
- Promote a variety of parks to meet the passive and active recreational needs of the Bradbury Master Plan Area;
- Implement the Delhi Community Plan architectural and landscape design standards as amended by the submittal of the SEIR documents for the Bradbury Master Plan area;
- Incorporate healthy development principles that include Energy Efficient Construction, walkable neighborhoods, and stormwater management within the Bradbury Master Plan Area;
- Develop an economically feasible community that reasonably minimizes its impact on biologically sensitive natural resources and utilizes existing and planned public infrastructure and services in an efficient manner;
- Support the development of Medium Density Residential adjacent to park and neighborhood commercial within the Bradbury Master Plan Area to support Delhi Community Plan Implementation Measure LU 1.1b – Land designated Medium or High Density Residential should be located near schools, parks, commercial and business centers, and major streets; and
- Implement a noise barrier along the eastern boundary of the Bradbury Master Plan that will be built to mitigate outside noise sources. In addition, future residential homes shall be constructed with material and installation methods which will reduce interior noise levels to be in compliance with designated noise standards.

4.2 Delhi Community Plan and Bradbury Master Plan Background

Delhi Community Plan

The community plan boundary includes about 2,500 acres of land located on either side of State Route 99 in northern Merced County. The community plan boundary encompasses the unincorporated community of Delhi and some adjacent rural areas. The community plan includes a conceptualized land use diagram for the entire community plan area and identifies the locations within the community plan boundary for which master plans are required as a community plan implementation tool. Figure 4-1, Delhi Community Plan Master Plan Areas, shows that a master plan must be prepared to guide development within the boundaries of the project site. The community plan states that land use designations shown on the community plan land use diagram can be blended within the master plan neighborhoods provided the development capacities shown in community plan Table 3.2, Master and Special Plan Areas Land Use Summary, are met and that all of the public amenities identified in that land use summary table are provided within reasonable proximity.

Modeling and analysis conducted for the community plan EIR was based on the dwelling counts and non-residential square footages described in the community plan. While these buildout numbers do not represent the maximum allowed, they are thresholds, which if exceeded, would require further review and analysis under CEQA.

The community plan identifies that the intent of a master plan is to implement the goals and policies of the community plan. Master plans must be consistent with the community plan and with Section 18.33.040 of the Merced County Zoning Code. Each master plan is required to follow the guidelines established for master plans and include the items listed in community plan Table 3.6, Master Plan Elements. The proposed Bradbury master plan has been prepared to provide conceptual development guidance for the portion of the community plan boundary described in the community plan as the Bradbury Master Plan Area.

4.3 **Project Characteristics**

Required Entitlements

Several entitlements are being requested by the applicant as deemed required by the County. A general plan amendment is required to approve changes to the land use designations in the community plan being requested for the project site. A zoning amendment is required to establish a planned development district for the site. Lastly, a master plan approval is required as a basis to implement the planned development zoning as codifiued in Chapter 18.20.020, Planned Development Zone Approval Process, of the Merced County Zoning Code. Characteristics of the proposed project are discussed below in the context of these required approvals.

After County approval of the master plan and zone change, more detailed tentative map, development plan and administrative permit applications would then be submitted and processed for development of one or more individual future projects within the site. No such applications have yet been submitted.

Proposed Land Use and Development Capacity

Figure 4-2, Proposed Bradbury Master Plan Land Use Plan, illustrates the type and arrangement of proposed land uses and the planned circulation network. The information is conceptual as is permitted by the zoning code requirements for submitting a master plan as part of a planned development application.

Residential use at low and medium densities is the dominant proposed land use. Average densities are planned at 5.1 units/per acre and 8.1 units/acre, respectively. The other planned developed use is neighborhood commercial. Significant acreage is also planned for park and recreation uses. A site is being reserved for dedication to the Delhi Unified School District for future development of an elementary school and adjacent middle school. A site is also being reserved for dedication to the Merced County Fire Department for a future fire station.

Table 4-1, Proposed Bradbury Master Plan Development Capacity, summarizes the proposed land use plan and identifies associated development capacity for each.

Land Use	Gross Acreage	Average Density (Units per Acre)	Dwelling Units	Bldg. Square Footage
Low Density Residential	173.2	5.1	883	
Medium Density Residential	23.0	8.1	186	
Neighborhood Commercial	10.1			136,680
Parks, Basins, Bike Paths	37.4			
School Site	23.8			
Fire Department Site	2.8			
Existing Ranchette	2.8			
Total	273.1		1,069	136,680

 Table 4-1
 Proposed Bradbury Master Plan Development Capacity

SOURCE: GDR Engineering 2022



 \mathbf{E}

Source: RMR Design Group 2006

Figure 4-1 Delhi Community Plan Master Plan Areas


Comparison of Community Plan/Proposed Master Plan Land Use and Development Capacity

The existing community plan land use plan for the project site is illustrated in Figure 3-5, Delhi Community Plan Land Use. By comparing Figures 4-2 and 3-5, it can be seen that the proposed master plan would amend the community plan land use designations. With the proposed land use designation amendments, development capacities assumed in Table 3.2 of the community plan for the Bradbury master plan area would also be modified. Table 4-2, Existing Community Plan/Proposed Master Plan Development Capacity Comparison, summarizes the changes in land use types and acreages, and identifies the resulting changes in development capacity. The total site area reported for the proposed master plan land use plan is about 12.1 acres greater than as assumed in the community plan. Community plan acreages were based on less precise information than has been developed for the proposed master plan. This is a common occurrence for a broader land use plan as compared to a site-specific development proposal. The difference does not materially affect the analysis in this SEIR.

Two notable land use changes are proposed. First, the proposed master plan eliminates the 50 acres of land designated for business park and the associated 457,380 square feet of business park building capacity. Second, residential development capacity is increased by about 293 dwelling units. This change results from a substantial increase in land dedicated to low density residential use, even while acreage planned for medium density residential is reduced. In part, it is these major and other less substantial changes in land use and development capacity that give rise to several potential environmental impacts of the proposed project that are evaluated in this SEIR.

Proposed Master Plan Features Residential Uses

No specific residential development is currently proposed. It is assumed that one or more tentative map approvals will be sought by the applicant in the future to enable developing the planned residential uses and further define sites for commercial and public facility development. Residential projects must be consistent with the residential design guidelines and standards included in the community plan and zoning code.

Neighborhood Commercial

The proposed neighborhood commercial land use is consistent with the community plan land use designation, both in terms of acreage and projected building square footage. No specific neighborhood commercial development project is currently being proposed by the applicant. Future neighborhood commercial uses must be consistent with the design guidelines and development standards in the community plan and zoning code.

Land Use	Community Plan Development Capacity ¹	Proposed Development Capacity ²	Proposed Change					
Residential								
Low Density Residential ³ Acres ⁴ Dwelling Units	105 590	173.2 883	+68.2 Acres +293 Dwelling Units					
Medium Density Residential ⁵ Acres Dwelling Units	Density 41 23 ial ⁵ 41 23 is 279 186 lling Units 186 186		-18 Acres - 93 Dwelling Units					
Non-Residential								
Neighborhood Commercial Acres Building Square Feet	10 136,680	10.1 136,680	+ 0.1 Acres No Change					
Business Park Acres Building Square Feet	50 457,380	0 0	- 50 Acres - 457,380 Square Feet					
Public Facilities								
Schools Acres School Types	30 Elementary School Middle School	23.8 Elementary School Middle School	- 6.2 Acres					
Parks/Detention/Paths Acres Park Types	25 Two Neighborhood Parks One Community Park Class I Bike Path	37.4 Two Neighborhood Parks One Community Park Class I Bike Path	+ 12.4 Acres					
Fire Station Acres	None	2.8	+2.8 Acres					
Totals								
Acres	261	273.1	+ 12.1 Acres ⁶					
Dwelling Units	869	1,069	+ 200 Dwelling Units					
Building Square Feet	594,060	136,680	- 457,380 Square Feet					

Table 4-2 Existing Community Plan/Proposed Master Plan Development Capacity Comparison

SOURCE: Merced County 2005, GDR Engineering 2022

NOTES:

1. Community Plan development capacity numbers for Bradbury Ranch are from Table 3.2, Master and Special Plan Areas Land Use Summary

2. Proposed Bradbury Ranch Master Plan development capacity numbers are from Table 4-X in this SEIR

3. The Low Density Residential designation allows for densities from 3.5 to 8.0 units/acre. Low Density Residential density is assumed at 4.5 dwelling units/ acre in the community plan, and 5.1 dwelling units/ acre in the proposed master plan

4. All acreages represent gross acreage and exclude Highway 99, Union Pacific Railroad, arterials, major and minor collectors and canals

5. Medium Density Residential density assumed at 9.0 dwelling units/acre in the community plan, 8.1 dwelling units per acre in the proposed master plan

6. Community plan acreages are not as precise as identified for the proposed master plan. Acreage discrepancy does not affect the analysis in the SEIR

Parks and Recreation *Parks*

Community plan Figure 6.1, Parks and Recreation, identifies the conceptual locations of park facilities within the community plan boundary. Two neighborhood parks and a regional park are identified as required within the Bradbury master plan boundary. The applicant has submitted a plan for parks and trails, shown in Figure 4-3, Parks and Bicycle/Pedestrian Pathways. Two neighborhood parks of 5.0 and 3.5 acres are proposed. A regional park of about 25.2 acres is also planned. Stormwater detention facilities totaling approximately 7.0 acres are integrated into the regional park, making the net usable regional park size about 18.2 acres.

The proposed master plan park plan is consistent with the number and type of required parks, and consistent with the minimum required park size standards for neighborhood and regional parks identified in the community plan, which are 3.0 and 15 to 20 acres, respectively.

Circulation

Roadway Plan

The conceptual master plan circulation plan in Figure 4-2 illustrates the planned internal collector roadway plan for North Avenue and Roads A, B, C and D. Planned roadway cross-sections for these roads, Bradbury Road, Vincent Road and internal local streets are shown in Figure 4-4, Planned Street Sections. The street sections are substantially consistent with the standards for the roadway classifications as shown in the community plan.

Bicycle and Pedestrian Plan

Figure 4-3 shows that a Class I bicycle path is planned within the community park that would provide a connection south from Bradbury Road and ultimately east along Shanks Road to Vincent Road. The roadway cross-sections shown in Figure 4-4 illustrate that Class II bicycle lanes are planned on all internal collector streets and along Vincent Road, with Bradbury Road improved to include a Class 1 bicycle path along the project site frontage to connect with the on-site Class 1 path. The bicycle network plan is substantially consistent with the bicycle facility plan shown in community plan Figure 5.7, Pedestrian & Bicycle Facilities. Class I bicycle paths are commonly designed for exclusive use by pedestrians, bicyclists and others using non-motorized modes of travel, are physically separated from roadways, and are located, where possible, to minimize roadway crossings to reduce interactions with vehicles. Class II bicycle lanes are lanes for bicyclists that are located adjacent to the outer vehicle travel lanes. These lanes have special lane markings, pavement legends, and signage.

As also shown in Figure 4-5, sidewalks and pedestrian pathways are included all roadway crosssections. This will ensure that future development within the site is internally connected and that the site itself is connected to the adjacent major roadways.

On-Site Utility Infrastructure

Water Supply and Distribution Infrastructure Plan

The applicant has submitted a water supply distribution infrastructure plan as shown in Figure 4-5, On-Site Water Supply and Distribution Plan. It shows that 12-inch mains are planned in Bradbury Road and Vincent Road, with a combination of 10- and 12-inch lines within internal collector roads, that together would form a looped system.

As part of its effort to understand potential water and wastewater improvements needed to serve the proposed project, the DCWD conducted analyses of its existing systems and demand on those systems that would be created by the project. The analysis is contained in the *Delhi Water and Sewer Systems Memo* (QK Inc. 2022) ("water and sewer memo"). DCWD determined that in addition to onsite water main system, additional on-site improvements are needed. Two associated improvement scenarios are deemed acceptable: 1) construct two water wells, or 2) construct one well and a 250,000-gallon water storage tank. An extension of the proposed water main in Vincent Road from the project site to an off-site point of connection would also be required. The applicant intends implement the first option by constructing two new water wells and has reserved two locations within the site for this purpose. Each well site is approximately 100' x 100'. The conceptual locations are shown in Figure 4-5. The well site locations would be refined as part of a more detailed engineering analysis to be conducted as part of the future tentative map process. The water main extension improvement is discussed in the Off-Site Infrastructure Improvements below.

Wastewater Collection Infrastructure Plan

Figure 4-6, On-Site Wastewater Collection Plan, shows the planned locations of wastewater mains. It illustrates that 15- and 18-inch mains are planned in Vincent Road, with a combination of 8- and 15-inch lines within internal collector roads. Internal mains would connect both to an existing main in Bradbury Road and to the planned main in Vincent Road.

Stormwater Management Plan

Like both water distribution and wastewater collection mains, storm water mains would be located within the internal collector streets. Stormwater would gravity flow to one of two stormwater detention basins that are planned within the regional park. Figure 4-7, On-Site Stormwater Collection System, shows the proposed plan.



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- Figures as shown in the Delhi Community Plan.
- Width modified to accommodate most recent CALTRANS bike path standards. 2.

Source: GDR Engineering 2022

Figure 4-4 **Planned Street Sections**

R/W





Delhi Community Plan Supplemental EIR



Public Facilities

Community plan Table 3.2, Master and Special Plan Areas Land Use Summary, does not identify a fire station site within the Bradbury master plan boundary. Consequently, Table 4-2 above, which is derived from Table 3-2 in the community, does not show land demand for a fire station site within the master plan boundary. However, community plan Figure 8-4, Public Safety, does show such as site. Community plan implementation measure PS 4.1.b calls for a new fire station within the Bradbury master plan area, or other appropriate location. Therefore, the proposed master plan includes a fire station site that is being reserved for dedication to the Merced County Fire Department. The fire station would be developed in the future as a separate, individual project that is subject to CEQA, with the County acting as lead agency.

Schools

Community plan Figure 8.3, Public School District, shows that an elementary school and a middle school are needed within the boundary of the Bradbury master plan area. The applicant has confirmed this need with the Delhi Unified School District and has included land capacity within the master plan boundary to meet the need. The applicant has reserved a site to accommodate a combined K-8 school facility. School facilities would be constructed in the future by the school district with the Delhi Unified School District acting as lead agency for preparing CEQA documentation to assess impacts of constructing school facilities. Nevertheless, in the absence of project-level information about the school project, this SEIR discloses at a general level the potential effects of operating the combined school facility. The combined school enrollment is assumed to be approximately 1,500 students as explained in Table 4-3 later in this section.

Agricultural Setbacks

Community plan implementation measures LU 4.2.a and LU 4.3.a, and Merced County zoning code chapter 18.12.040 A.3 (b) require setbacks from adjacent agricultural designated lands outside the community plan boundary. Community plan implementation measure OS 3.1.b requires that residential uses within the community plan boundary be buffered from adjacent agricultural uses outside the community plan boundary, such as by a 200-foot habitable building setback. The Bradbury master plan area is bordered on the north and east by land in agricultural use.

The proposed master plan land use plan shown in Figure 4-2 shows that 200-foot setbacks are planned along Bradbury Road and Vincent Road. These setbacks are consistent with the setback requirements identified in the community plan. The proposed master plan also shows a 1,000-foot setback from the existing dairy operation to the northeast, as required in zoning code chapter 18.64(B)(3). The small area within the site that falls within this setback is already well within the 200-foot setback already established in that location, so does not present an additional land use design constraint.

Off-Site Infrastructure Improvements

Several off-site infrastructure improvements will be needed to serve the proposed project. These are summarized below. These improvements would be constructed by the DCWD, and separate environmental review may be required prior to implementation. Since these improvements would be triggered by buildout of the proposed project, they are considered reasonably foreseeable. Consequently, the potential indirect environmental effects of these off-site improvements are evaluated at a general level in this SEIR given that detailed improvement plans for them are not currently available. The improvements would be funded by the project applicant.

Water Distribution Infrastructure

As noted previously, a water and sewer memo prepared in cooperation with the DCWD identifies off-site water system improvements required to serve the project. Two off-site water distribution system improvements are required. The first is a 12-inch main that would be located along the western edge of the project site, then cross over the irrigation canal, then under U.S. Highway 99 in an existing 24-inch steel casing to connect to the terminus of an existing main located on the west side of the highway. The second is an approximately 600-foot long new 12-inch water main that would extend from the southern project site boundary on Vincent Road to the south to a connection point in the existing water distribution system. This main would be placed within the existing Vincent Road right-of-way. The general improvement locations are shown in Figure 4-8, Off-Site Water System Infrastructure Requirements.

Wastewater Collection Infrastructure

The water and sewer memo identifies that a new 15- to 21-inch wastewater conveyance trunkline is needed to serve the proposed project. site. It would extend south from the southern project site boundary on Vincent in Vincent Road to 4th Street, in 4th Street to 6th Street, and south in 6th Street to its terminus at an existing lift station. Total main trunkline length is approximately one linear mile. The lift station will also require upgrades. Figure 4-9, Off-Site Wastewater Infrastructure Requirements, shows the location of the trucklines.

Wastewater Treatment Plant Capacity Expansion

The water and sewer memo concluded that DCWD's existing wastewater treatment plant will also require upgrades. The existing plant has permitted capacity of 1.0 million gallons per day, with a current capacity of 0.8 million gallons per day. Current flow into the plant is about 0.61 million gallons per day. The proposed project would generate about 0.365 million gallons per day, thereby requiring that plant capacity be increased up to its permitted capacity. The upgrades include modifying existing piping to enable treated water to discharge to two percolation ponds that are already constructed but unused, paving of an existing algae drying area, and constructing a drainage discharge pipe from the drying area to an existing treatment pond. The improvements would all occur within the footprint of existing developed or substantially degraded (algae drying area) areas of the wastewater treatment plant. Figure 4-10, Wastewater Treatment Plant Capacity Improvements, shows the types and locations of required improvements.



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Source: Quad Knopf Inc. 2022

Figure 4-10 Wastewater Treatment Plant Capacity Improvements

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Applicant-Proposed GHG Reduction Measures

As part of the project design, the applicant is proposing to eliminate the potential for natural gas use in the residential components of the proposed project. The applicant is also proposing to install electric vehicle support infrastructure in the residential and commercial components of the project consistent with the Tier 2 voluntary standards contained in the California Green Building Code. Both measures are being proposed to reduce greenhouse gas emissions from the proposed project. These measures, which would be required as conditions of approval by the County, are discussed further in Section 7.0, Greenhouse Gas Emissions.

Conceptual Phasing

The applicant anticipates that the project site would build out over approximately 20 years from the date one or more future tentative maps are approved for the site. Tentative map applications would be submitted in the future as part of a separate application process after the current general plan amendment and rezoning requests are approved by the County. Up to about 11 phases are assumed. The first approximately nine phases would include the single-family residential components of the project at up to about 100 dwelling units per phase. The last two phases would include the medium-density residential and the neighborhood commercial components of the project. Parks and other improvements would be constructed based on timing agreements between the developer(s) and the County. The applicant has noted that the buildout timeframe and the individual phasing concept are subject to change over time based on market conditions. Because of the uncertainty about whether or not actual development will occur consistent with the conceptual phasing plan, the information is provided here only for informational purposes. It has not been used as an input to analyses of environmental impacts in this SEIR.

Projected Population and Employment

The planned residential development would provide capacity for housing additional residents. The new neighborhood commercial use and new schools would provide capacity for new employment. Population and employment projections for the project are shown in Table 4-3, Population and Employment Projections.

4.4 Intended Uses of the SEIR

The general plan amendment and rezoning requests require approval from Merced County. Since the proposed project would not directly result in physical development, approvals from other responsible and/or trustee agencies would not be necessary. However, such approvals could be required in the future for future individual development projects proposed within the project site boundary. As part of the SEIR public review process, responsible and/or trustee agencies may provide comments on topics evaluated in the SEIR that are germane to their responsibilities. The Merced County Board of Supervisors must certify the SEIR before approving the requested entitlements. The EIR would also be considered by responsible agencies as part of their decisionmaking processes for future project-specific permits and approvals over which they have discretion.

Table 4-3Population and Employment Projections

Population and Employment					
Population	4,104 ¹				
Retail Employment (# Jobs)	391 ²				
School Employment (# Jobs)	143 ³				
Total	4,638				

SOURCE: EMC Planning Group 2022, U.S. Census Bureau 2022, Ed Data 2022, Brookings Institution 2016 NOTE:

1. Population based on 1,069 dwelling units x 3.84 persons per household for Delhi per the U.S. Census Bureau.

Retail employment is based on 350 square feet of building space per employee per the community plan draft EIR and 136,680 square feet of neighborhood commercial.

 School employment based on 1,500 total students, 21 students per teacher = 71 teachers, plus an equivalent number of non-teacher employment (e.g., librarians, English as second language instruction, school administration, administrative staff, counselors, nurses, food service, custodial, etc.

Current and/or future actions and approvals required to implement the proposed project, including actions for which the EIR would be used, are listed below.

Merced County Actions

Actions for Current Requested Entitlements

- Certify EIR;
- Adopt CEQA Findings;
- Approve Rezoning;
- Approve Bradbury Ranch Master Plan;
- Amend Delhi Community Plan land use map to show the new land use plan for the Bradbury master plan area;
- Amend the Zoning Map to show the new zoning designation; and
- Adopt Mitigation Monitoring and Reporting Program.

Actions Associated with Future Individual Project Specific Entitlements for which Merced County is the Decision-Making Authority

- Additional CEQA Documentation (if required);
- Approve Tentative Map(s);
- Approve Conditional Use Permit(s); and/or
- Approve Site Plan and Design Review.

Potential Responsible Agency Actions

- California Department of Fish and Wildlife special-status species permitting;
- San Joaquin Valley Air Pollution Control District approve air permits for individual emissions sources if proposed; and
- Regional Water Quality Control Board approve National Pollutant Discharge Elimination System permit.

5.0 Air Quality

This section of the EIR assesses effects to air quality that from air pollutant emissions generated by future development of the project site with land uses included in the proposed project. The discussion and analysis in this section is based primarily on information from the following sources:

- Delhi Community Plan (Merced County 2005);
- Draft Environmental Impact Report for the Delhi Community Plan EIR (Merced County 2005);
- Merced County General Plan Revised Draft Background Report (Merced County 2012);
- Guidance for Assessing and Mitigating Air Quality Impacts (San Joaquin Valley Air Pollution Control District 2015) (GAMAQI);
- 2018 PM2.5 Plan for the San Joaquin Valley (San Joaquin Valley Air Pollution Control District 2021);
- Bradbury Ranch Master Plan CalEEMod Criteria Air Pollutant and Greenhouse Gas Emissions Modeling
 Methodology, Assumptions, and Results (EMC Planning Group 2022) ("AQ/GHG memo"); and
- Bradbury Master Plan Air Quality Health Risk Assessment (Illingworth and Rodkin 2022) ("health risk assessment").

Responses to the Notice of Preparation

The San Joaquin Valley Air Pollution Control District submitted 20 comments on the NOP. Key comments address land use and need to reduce VMT, project siting and exposure to air pollutants, construction and operational air quality analysis methodology, health risk assessment screening and analysis methodology, and voluntary emissions reduction agreements. Several of the comments addressed air quality regulations and recommendations for project design features to address air quality. Refer to Appendix A for the comment letter.

5.1 Environmental Setting

Air Basin Characteristics

The project site is located in Merced County within the San Joaquin Valley Air Basin (air basin), which is about 35 miles wide and 250 miles long. The air basin encompasses the San Joaquin Valley with the Sierra Nevada Mountains to the east, the Coast Ranges to the west, and the Tehachapi mountains to the south. Merced County is located in the northern portion of the air basin, which

also includes San Joaquin County, Stanislaus County, Madera County, Fresno County, Kings County, Tulare County, and a portion of Kern County. Surrounded by mountain ranges, the air basin drains to the north, with an opening at the Carquinez Strait leading into San Francisco Bay and then the Pacific Ocean. Summer winds blowing out of the north become trapped in the southern portion of the basin. The potential for serious summer air pollution in the air basin is strong because of high surface temperatures, plentiful sunshine, relatively stable air, and mountains that trap emissions. In winter, low rainfall, strong inversions and weak winds allow emissions to build up to high levels. Air flow is considerably affected by summertime inversions at lower elevations than the surrounding topography and as a result can lead to a buildup of ozone and ozone precursor pollutants within the basin. Wintertime inversions trap air near the ground and can lead to buildup of particulate matter air pollutants.

Criteria Air Pollutants and Precursors and Their Effects on Human Health

The six most common and widespread air pollutants of concern, or "criteria air pollutants," are ground-level ozone, nitrogen dioxide, particulate matter, carbon monoxide, sulfur dioxide, and lead. In addition, reactive organic gases are a key contributor to the criteria pollutants because they react with other substances to form ground-level ozone. The common properties, sources, and related health and environmental effects of these pollutants are summarized in Table 5-1, Criteria Air Pollutants.

Health effects of criteria air pollutants include, but are not limited to, asthma, bronchitis, chest pain, coughing, throat irritation, and airway inflammation. Currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's criteria air pollutant emissions and specific human health impacts. The thresholds of significance for criteria air pollutants crafted by local air districts are not intended to be indicative of any localized human health impact that an individual project may have. The CEQA air quality analysis for criteria air pollutants is not really a localized, project-level impact analysis but one of regional, cumulative impacts. For these reasons, it is not the norm to conduct an analysis of the localized health impacts associated with criteria air pollutant emissions as part of the CEQA process.

Ozone

Ground-level ozone is created by complex chemical reactions between nitrogen oxides and reactive organic gases in the presence of sunlight. Since ground-level ozone is not emitted directly into the atmosphere, but is formed because of photochemical reactions, it is considered a secondary pollutant.

Ozone is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Asthma, bronchitis, and other respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to ozone. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop a headache or cough, or may experience a burning sensation in the chest.

Pollutant	Properties	Major Sources	Related Health & Environmental Effects
Ozone	Ground-level ozone is not emitted directly into the air. It results from chemical reactions between nitrogen oxides and volatile organic compounds in presence of sunlight.	 Automobiles; Industrial facilities; Gasoline vapors; Chemical solvents; Electric utilities. 	 Chest pain, coughing, throat irritation, and airway inflammation Worsens bronchitis, emphysema, and asthma. Affects sensitive vegetation and ecosystems.
Nitrogen Dioxide	Reddish-brown gas formed during combustion of fuel. Nitrogen dioxide is a part of a group of highly reactive gases known as nitrogen oxides.	 Combustion of fuel; Automobiles; Power plant; Off-road Equipment. 	 Irritate respiratory system / increase respiratory infections Development of asthma Forms acid rain – harms sensitive ecosystems Creates hazy air Contributes to nutrient pollution in coastal waters
Respirable and Fine Particulate Matter	Mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, soot, dirt, or smoke can be seen with the naked eye. Others are so small that they can only be detected with an electron microscope.	 Automobiles; Power Plants; Construction sites; Tilled farm fields; Unpaved roads; Smokestacks. 	 Aggravated asthma; Irritation of the airways, coughing, and difficulty breathing; Decreased lung function; Premature death; Reduced visibility.
Carbon Monoxide	Colorless, odorless gas released when something is burned.	 Fuel combustion; Industrial processes; Highly congested traffic. 	 Chest pain for those with heart disease; Vision problems; Dizziness, unconsciousness, and death (at high levels).
Sulfur Dioxide	Colorless acid gas with a pungent odor formed during combustion of fuel. In the entire group of sulfur oxides, sulfur dioxide is the component of the greatest concern.	 Fuel combustion; Industrial processes; Locomotives, ships, and other heavy equipment; Volcanoes. 	 Makes breathing difficult; Worsens asthma; Contributes to acid rain; Reduced visibility; Damages statues and monuments.
Lead	Lead is a naturally occurring element found in small amounts in the earth's crust.	 Ore and metal processing; Leaded aviation fuel; Waste Incinerators; Utilities; Lead-acid battery manufacturers. 	 High blood pressure and heart disease in adults; Behavioral problems, learning deficits, and lowered IQ in infants and young children; Decreased plant and animal growth; Neurological effects in vertebrates.

Table 5-1Criteria Air Pollutants

SOURCE: United States Environmental Protection Agency (EPA) 2021

Research has shown that exposure to ozone damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Research has shown that ozone also damages vegetation.

If project-generated concentrations of reactive organic gases and/or nitrogen oxides exceed the applicable thresholds of significance, concentrations of ground level ozone resulting from these pollutants could potentially result in significant resulting in adverse human health impacts.

Reactive Organic Gases

Reactive organic gases (ROG) are ozone precursors that are emitted from a variety of sources, including liquid and solid fuel combustion, evaporation of organic solvents, and waste disposal. ROGs are carbon compounds (excluding carbon monoxide) including carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate as well as a list of compounds specifically excluded by the California Air Resources Board (CARB) or the United States Environmental Protection Agency (EPA). ROGs are also known as volatile organic compounds (VOC). On-road cars, trucks, motorcycles, and buses are a major source of ozone precursors emissions.

Nitrogen Dioxide

Nitrogen dioxide (NO₂) primarily gets in the air from the combustion of fuel in cars, trucks and buses, power plants, and off-road equipment. NO₂ is a reddish-brown gas that can irritate the lungs and can cause breathing difficulties at high concentrations. NO₂ is one of a group of highly reactive gases known as nitrogen oxides (NO_x). NO₂ is used as the indicator for the larger group of NO_x, which also includes nitrous acid and nitric acid. NO_x is a major contributor to ozone formation. NO_x also contributes to the formation of particulate matter (see discussion below).

Particulate Matter

Particulate matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Particulate matter with diameter of 10 micrometers or less is referred to as PM₁₀. PM_{2.5} includes a subgroup of finer particles that have a diameter of 2.5 micrometers or less. Particulate matter is directly emitted to the atmosphere as a byproduct of fuel combustion, wind erosion of soil and unpaved roads, and from construction or agricultural operations. Small particles are also created in the atmosphere through chemical reactions. Approximately 64 percent of fugitive dust is respirable particulate matter. Minimal grading typically generates about 10 pounds per day per acre on average while excavation and earthmoving activities typically generate about 38 pounds per day per acre.

Although particles greater than 10 micrometers in diameter can cause irritation in the nose, throat, and bronchial tubes, natural mechanisms remove much of these particles. Particles less than 10 micrometers in diameter are able to pass through the body's natural defenses and the mucous

membranes of the upper respiratory tract and enter into the lungs. The particles can damage the alveoli. The particles may also carry carcinogens and other toxic compounds, which can adhere to the particle surfaces and enter the lungs.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is released when fuel is burned. The greatest sources of CO to outdoor air are cars, trucks and other vehicles or machinery that burn fossil fuels. A variety of household items such as gas space heaters, furnaces, fireplaces, lanterns, gas stoves, grills, and lawn equipment also release CO and can affect air quality indoors.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

Sulfur Oxides (SO_x)

Within the larger group of gaseous sulfur oxides (SO_x), sulfur dioxide (SO₂) is the component of greatest concern, and is used as the indicator for the group. Emissions that lead to high concentrations of SO₂ generally also lead to the formation of other SO_x. SO₂ is a colorless acid gas with a pungent odor. SO₂ is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel. SO₂ dissolves in water vapor to form acid, and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and their environment. Health effects of SO₂ include damage to lung tissue and increased risk of acute and chronic respiratory disease.

Lead

Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. Thirty years ago, mobile sources were the main contributor to ambient Pb concentrations in the air. Pb was phased out of on-road vehicle gasoline between 1975 and 1996. Consequently, levels of Pb in the air decreased 98 percent between 1980 and 2014 (EPA 2021). As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of Pb in air are generally found near Pb smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Toxic Air Contaminants and their Effects on Human Health

Toxic air contaminants ("TACs") are pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. Potential human health effects of toxic air contaminants include birth defects, neurological damage, cancer, and death. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Individual

toxic air contaminants vary greatly in the health risk they present. At a given level of exposure, one toxic air contaminant may pose a hazard that is many times greater than another. TACs can be classified as either carcinogens or non-carcinogens.

Diesel Emissions

Diesel engines emit a complex mix of pollutants including nitrogen oxides, particulate matter, and TACs. The CARB reports that recent air pollution studies have shown an association that diesel exhaust and other cancer-causing TACs emitted from vehicles are responsible for much of the overall cancer risk from TACs in California. Particulate matter emitted from diesel-fueled engines (DPM) was found to comprise much of that risk.

Diesel exhaust is especially common during the grading stage of construction (when most of the heavy equipment is used), and adjacent to heavily trafficked roadways where diesel trucks are common. Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs. Diesel exhaust also contains over 40 cancer-causing substances, most of which are readily adsorbed on the soot particles. Among the TACs contained in diesel exhaust are dioxin, lead, polycyclic organic matter, and acrolein. Diesel engine emissions are responsible for about 70 percent of California's estimated cancer risk attributable to TACs (CARB 2022a). As a significant fraction of particulate pollution, diesel particulate matter contributes to numerous health impacts, including increased hospital admissions, particularly for heart disease, but also for respiratory illness, and even premature death.

Diesel exhaust is especially common during the grading stage of construction (when most of the heavy equipment is used), and adjacent to heavily trafficked roadways where diesel trucks are common. The EPA regulates diesel engine design and fuel composition at the federal level, and has implemented a series of measures since 1993 to reduce nitrogen oxides and particulate emissions from off-road and highway diesel equipment. Before the EPA began regulating sulfur in diesel, diesel fuel contained as much as 5,000 parts per million (ppm) of sulfur. In 2006, the agency introduced regulations to lower the amount of sulfur in diesel fuels to 15 ppm (EPA 2021). This fuel is known as ultra-low sulfur diesel.

The EPA Tier 1 non-road diesel engine standards were introduced in 1996, Tier 2 in 2001, Tier 3 in 2006, with final Tier 4 in 2014 (DieselNet 2022). The CARB is currently holding public workshops for its development of Tier 5 emissions standards that seek to further reduce NOx and particulate matter in a 2028-2030 timeframe. Table 5-2, Typical Non-road Engine Emissions Standards, compares emissions standards for NO_X and particulate matter from non-road engine Tier 1 through Tier 4 for typical engine sizes. As illustrated in the table, emissions for these pollutants have decreased significantly for construction equipment manufactured over the past 20 years, and especially for construction equipment manufactured in the past five years.

Engine Tier and Year Introduced	NOx Emissions ¹		Particulate Emissions ¹			
	100-175 HP	175-300 HP	300-600 HP	100-175 HP	175-300 HP	300-600 HP
Tier 1 (1996)	6.90	6.90	6.90		0.40	0.40
Tier 2 (2001)	2	2	2	0.22	0.15	0.15
Tier 3 (2006)	2	2	2	†³	†³	†³
Tier 4 (2014) ⁴	0.30	0.30	0.30	0.015	0.015	0.015

Table 5-2 Typical Non-road Engine Emissions Standards

SOURCE: DieselNet 2022

NOTES:

1. Expressed in g/bhp-hr, where g/bhp-hr stands for grams per brake horsepower-hour.

2. Tier 1 standards for NO_X remained in effect.

3. † - Not adopted, engines must meet Tier 2 PM standard.

4. Tier 4 diesel engines can reduce DPM by as much as 85 percent (Diesel Net, 2022)

In California, non-road equipment fleets can retain older equipment, but fleets must meet averaged emissions limits. As of January 2018, new equipment for large and medium fleets must be Tier 3 or better; by January 2023 small fleets must meet the Tier 3 or better standard; and over time the older equipment must be fitted with particulate filters. Large and medium fleets have increasingly strict fleet compliance targets through 2023 and small fleets through 2029. A small fleet has total horse power of 2,500 or less, and a medium fleet has total horsepower of between 2,500 and 5,000. Owners or operators of portable engines and other types of equipment can register their units under the CARB statewide Portable Equipment Registration Program in order to operate their equipment throughout California without having to obtain individual permits from local air districts (CARB 2022c).

Asbestos

Asbestos handling and disposal are regulated by Federal and State law. Asbestos is generally not harmful when asbestos-containing materials are left undisturbed, but when disturbed, microscopic fibers can be dislodged and remain in the air for long periods. If asbestos fibers are inhaled, they can become lodged in body tissues and pose a serious health threat, in particular lung disease.

Asbestos is found in several kinds of building materials and occurs naturally in areas of the state. Naturally-occurring asbestos has sometimes been used for unpaved gravel roads, landscaping, and fill. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. While it is present all over the state of California — in 42 of 58 counties — naturally occurring asbestos can be found most abundantly in and around Humboldt County, in areas of San Benito and Monterey counties, and in western El Dorado County. Merced County is not identified by the EPA as an area of high risk for naturally occurring asbestos exposures (EPA 2022a).

Polycyclic Aromatic Hydrocarbons (PAHs)

The U.S. Center for Disease Control describes polycyclic aromatic hydrocarbons (PAHs) as a class of chemicals that occur naturally in coal, crude oil, and gasoline. They also are produced when coal, oil, gas, wood, garbage, and tobacco are burned. PAHs generated from these sources can bind to or form small particles in the air. High-temperature cooking will form PAHs in meat and in other foods. Some PAHs are carcinogenic and prolonged exposure can lead to increased health risks. The health effects from environmental exposure to low levels of PAHs are unknown. Large amounts of naphthalene in air can irritate eyes and breathing passages. Workers who have been exposed to large amounts of naphthalene from skin contact with the liquid form and from breathing naphthalene vapor have developed blood and liver abnormalities. (U.S. EPA 2008).

Sensitive Receptors

Although air pollution can affect all segments of the population, certain groups are more susceptible to its adverse effects than others. Children, the elderly, and the chronically or acutely ill are the most sensitive population groups. These sensitive receptors are commonly associated with specific land uses such as residential areas, schools, retirement homes, and hospitals. In addition, certain air pollutants, such as carbon monoxide, only have significant effects if they directly affect a sensitive population. The sensitive receptors nearest to the site are single-family residences located along Bradbury Road near the northern project site boundary. Additional receptors are located at farther distances from the project site along Bradbury Road, Vincent Road, North Avenue and south of State Route 99. The Shattuck Park Head Start preschool and daycare is located south of the project site on Vincent Road. The Head Start program accepts infants and children from 0 to 5 years of age (Illingworth and Rodkin 2022). Sensitive receptors near the project site are shown in Figure 3 of the health risk assessment as discussed further in the analysis of toxic air contaminant impacts below.

Sources of Toxic Air Contaminants

The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) (handbook) encourages local land use agencies to consider the risks from air pollution prior to making decisions that approve the siting of new sensitive receptors (e.g., schools, homes, or daycare centers) near sources of concentrated air pollution. A supplement to the handbook, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways*, was adopted by CARB in 2017 and provides guidance on methods to reduce exposures to mobile-source emissions through congestion management and site design that improves emissions dispersion.

The CARB also has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of diesel particulate matter. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of diesel particulate matter emissions from California highways, and a number of others apply to off-road vehicles and construction equipment. The CARB and air district recommend that local planning agencies consider proximity

of sensitive receptors to high-volume roadways. Both agencies make recommendations regarding the siting of new sensitive land uses near freeways, truck distribution centers, dry cleaners, gasoline dispensing stations, and other air pollution sources including the following locations:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day (the air district defines high-volume roadways as those with more than an average of 10,000 vehicles per day);
- Within 1,000 feet of a major service and maintenance rail yard, including distribution centers with 100 or more daily truck trips or 40 daily truck trips that use refrigeration units;
- Within 300 feet of any dry-cleaning operation (for operations with two or more machines, provide 500 feet); and
- Within 50-300 feet of a large gas station.

The air district also recommends local agencies consider the siting of new sensitive land uses within the district's screening distance of 1,000 feet of permitted stationary sources that exceed the air district health risk standards.

Siting of new sensitive land uses within these recommended distances may be possible, but only after site-specific studies are conducted to identify site- and project-specific health risks. The air district and CARB recommendations acknowledge that land use agencies have to balance other siting considerations such as housing and transportation needs, economic development priorities, and other quality of life issues. Existing sources of TACs near the project site consist of State Route 99 and a Union Pacific Railroad (UPRR) line. These sources are shown in Figure 3 of the health risk assessment as further described below.

Stationary Sources

The air district issues permits for stationary equipment that would result in the emission of toxic air contaminants, and maintains a database of these sources. Generally, if a sensitive land use is proposed within 1,000 feet of an existing source, or if a new source is proposed within 1,000 feet of a sensitive receptor, the potential effects of exposures to the source must be considered. There are no existing stationary sources of TACs within 1,000 feet of the project site (Illingworth and Rodkin 2022).

Mobile-Source Emissions *High-Volume Roadways*

The air district recommends an assessment of potential exposures to mobile-source TACs that can increase cancer risks when sensitive receptors are proposed to be located within 1,000 feet of a high-volume freeway or roadway. Unlike stationary sources of air pollution, siting of new sensitive receptors near high volume roadways and freeways does not require air quality permits or approval by air districts but can increase risks of air pollution-related health problems. The increase in health risks from prolonged exposures to diesel exhaust are greatest near high-volume freeways.

The project site is located in proximity to State Route 99, which is considered a high-volume roadway with greater than 10,000 average daily vehicle trips per day. According to the Caltrans Traffic Census webpage, State Route 99 carries between 146,000 and 159,000 average daily vehicle trips (California Department of Transportation 2022).

Rail Operations

Diesel-powered locomotives are mobile-sources of TAC emissions. An active UPRR line is located adjacent to the west boundary of the project site. According to data provided in the project noise report, approximately 14 train operations occur per day on this line throughout the day and night (WJVA 2022).

Construction Emissions

Emissions generated during construction are "short-term" in the sense that they would be limited to the actual periods of site development and construction. Short-term construction emissions are typically generated by the use of heavy equipment, the transport of materials, and construction employee commute trips. Construction-related emissions consist primarily of volatile organic compounds, nitrogen oxides, diesel particulate matter, suspended particulate matter, and carbon monoxide. Emissions of volatile organic compounds, nitrogen oxides, DPM, and carbon monoxide are generated primarily by the operation of gas and diesel-powered motor vehicles, asphalt paving activities, and the application of architectural coatings. Suspended particulate matter emissions are generated primarily by wind erosion of exposed graded surfaces.

Air Quality Standards

Both the U.S. EPA and CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants that represent safe levels that avoid specific adverse health effects associated with each pollutant.

Federal and State Standards for Air Pollutants

Ambient air quality is described in terms of compliance with the federal and state standards. Both the federal and state governments have developed ambient air quality standards for the most prevalent pollutants, which include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter, and fine particulate matter. The state standards generally have lower thresholds than the federal standards, yet both are applicable to proposed plan. When thresholds are exceeded at regional monitoring stations, an "attainment plan" must be prepared that outlines how an air district will achieve compliance. Generally, these plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods. Table 5-3, Federal and State Ambient Air Quality Standards, lists federal and state ambient air quality standards for common air pollutants.
Pollutant	Averaging	National Standards ¹				California Standards ²	
	Time	Primary ^{3,4}		Secondary ^{3,5}		Concentration ³	
		ppm	µg/m³	ppm	µg/m³	ppm	µg/m³
O ₃ 6	1 Hour	-	-	-	-	0.09	180
	8 Hour	0.07	137	0.07	137	0.07	137
PM ₁₀ ⁷	24 Hour	-	150	-	150	-	50
	Annual	-	-	-	-	-	20
PM _{2.5} ⁷	24 Hour	-	35	-	35	-	-
	Annual	-	12	-	15	-	12
CO	8 Hour	9	10	-	-	9.0	10
	1 Hour	35	40	-	-	20.0	23
NO2 ⁸	Annual	0.053	100	0.053	100	0.03	57
	1 Hour	0.10	188	-	-	0.18	339
SO ₂ 9	Annual	0.03	See note 9	-	-	-	-
	24 Hour	0.14	See note 9	-	-	0.04	105
	3 Hour	-	-	0.5	1,300	-	-
	1 Hour	0.075	196	-	-	0.25	655
Pb ^{10,11}	30 Day Average	-	-	-	-	-	1.5
	Rolling 3- month Average	-	0.15	-	0.15	-	-
	Calendar Quarter	See note 10	1.5	See note 10	1.5	-	-
Visibility Reducing Particles ¹²	8 Hour					See note 12	
Sulfates	24 Hour	No Federal Standards - 25 0.03 42 0.01 26				-	25
Hydrogen Sulfide	1 Hour						
Vinyl Chloride ¹⁰	24 Hour					0.01	26

Table 5-3 Federal and State Ambient Air Quality Standards

SOURCE: CARB 2016

NOTES:

National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than
once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is
equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average
concentration above 150 µg/m³ is equal to or less than one. For PM₂₅, the 24-hour standard is attained when 98 percent of the daily concentrations,
averaged over three years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

California standards for ozone, carbon monoxide, sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

- 3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas (mg/m³).
- 4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- 5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- 6. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- 7. On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 μg/m³ to 12.0 μg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 μg/m³, as was the annual secondary standard of 15 μg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 μg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- 8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
- 9. On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
- 10. The CARB has identified lead and vinyl chloride as 'TACs' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
- 11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 μg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
- 12. In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Air Basin Attainment Status

In accordance with the Clean Air Act, CARB is required to designate regions of the state as attainment, non-attainment, or unclassified with regard to that region's compliance with criteria air pollutants standards. An "attainment" designation for a region signifies that pollutant concentrations do not violate the standard for that pollutant in that region. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once. An "unclassified" designation signifies that available data does not support either an attainment or non-attainment status.

The primary air pollutants of concern in the air basin are ozone and particulate matter, for which the air basin is in nonattainment. According to the air district, the air basin is in nonattainment for the federal and state standards for ozone (eight-hour) and PM_{2.5}, and with the state standards for ozone (one hour) and PM₁₀. The air basin is either unclassified or in attainment with all other state and federal ambient air quality standards. Table 5-4, Air Basin Attainment Status, summarizes the air basin's attainment of national and state standards for the most common criteria air pollutants.

Ambient Air Quality Air Quality Monitoring

The air district and CARB maintain several air quality monitoring sites in the San Joaquin Valley, including sites in the City of Merced. The Merced monitoring site (Merced-S Coffee Avenue) measures O₃, CO, NO_x, and PM₁₀. The nearest monitoring site for PM₁₀ and PM_{2.5} is at 2334 M

Street in the City of Merced. Table 5-5, Annual Air Quality Standards Violations, presents the number of days per year where O₃ and particulate matter levels at one or both monitoring stations exceeded the state/federal ambient air quality standards during the five-year period of 2019 to 2021.

Pollutant	State	Federal	
Ozone (O ₃)	Non-attainment	-	
Inhalable Particulates (PM10)	Non-attainment	Attainment	
Fine Particulates (PM _{2.5})	Non-attainment	Non-attainment ¹	
Carbon Monoxide (CO)	Unclassified/Attainment	Unclassified/Attainment	
Nitrogen Dioxide (NO2)	Attainment	Unclassified/Attainment	
Sulfur Dioxide (SO ₂)	Attainment	Unclassified/Attainment	
Lead (Pb)	Attainment	-	

Table 5-4 Air Basin Attainment Status Designations

Table 5-5 Annual Air Quality Standards Violations

	Ozone ¹			PM ₁₀ ²		PM _{2.5} ¹
Year	Federal	State		Fodoral 24 br	State 21 br	Federal 24-hr
	8 hr	1 hr	8 hr	reuerai 24-ili	Sidle 24-11	
2021	7	2	21	-	-	0
2020	5	2	20	6	-	13
2019	1	0	6	0	54	8
Total	4	3	4	1	4	35

SOURCE: CARB 2022a NOTES: 1. Merced – S Coffee Avenue

2. Merced -2334 M Street

5.2 Regulatory Setting

Federal

United States Environmental Protection Agency

The EPA was established on December 2, 1970 to create a single agency that covered several agency concerns: federal research, monitoring, standard-setting and enforcement. The purpose of the EPA is to protect the overall health of humans and the environment. The EPA does this by safeguarding all Americans from the hazardous risks in the environment where they live and work. Environmental safety is one of the primary concerns of U.S. policies and the following are

commonly used to establish environmental policy: natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade. The EPA has established a series of increasingly strict emission standards for new off-road diesel equipment, on-road diesel trucks, and harbor craft. Construction equipment used for the project, including heavy-duty trucks, and off-road construction equipment would be required to comply with the U.S. EPA Nonroad Diesel Rule emission standards.

Federal Clean Air Act

Air quality is regulated on the federal level. The Clean Air Act, adopted in 1970 and amended in 1990, set federal standards for air quality.

The federal Clean Air Act required the EPA to set National Ambient Air Quality Standards for several air pollutants on the basis of human health and welfare criteria. The Clean Air Act also set deadlines for the attainment of these standards. The Clean Air Act established two types of national air standards: primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive persons such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. Historically, air quality laws and regulations have divided air pollutants into two broad categories of airborne pollutants: "criteria pollutants" and "toxic air contaminants."

In general, the Clean Air Act creates a partnership between state and federal governments for implementation of the Clean Air Act provisions. The federal Clean Air Act requires states to prepare an air quality control plan known as a State Implementation Plan. California's State Implementation Plan contains the strategies and control measures that California will use to attain the National Ambient Air Quality Standards. If, when reviewing the State Implementation Plan for conformity with Clean Air Act Amendments mandates, the EPA determines a State Implementation Plan to be inadequate, EPA may prepare a Federal Implementation Plan for the non-attainment area and may impose additional control measures.

National Ambient Air Quality Standards

Ambient air quality is described in terms of compliance with the state and national standards. State standards are discussed below. In general, criteria pollutants are pervasive constituents, such as those emitted in vast quantities by the combustion of fossil fuels. Both the state and federal governments have developed ambient air quality standards for the most prevalent pollutants, which include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter, and fine particulate matter (refer to Table 5-3).

State California Clean Air Act

The California Clean Air Act, signed into law in 1988, requires all areas of the State to achieve and maintain California ambient air quality standards by the earliest practical date. California's ambient air quality standards are established to protect the health of the most sensitive groups, apply to the same criteria air pollutants as the federal Clean Air Act, and also includes State-identified criteria air pollutants, which are sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 2-3 shows the ambient air quality standards currently in effect for each of the federally identified criteria air pollutants, as well as, state recognized pollutants, such as sulfates, visibility-reducing particles, hydrogen sulfates, visibility-reducing particles, hydrogen sulfates, visibility-

California Air Resources Board

CARB is responsible for coordination and oversight of federal, state, and local air pollution control programs in California and for implementing the requirements of the federal and State Clean Air acts. The duties of CARB include coordinating air quality attainment efforts, setting standards, conducting research, and creating solutions to air pollution. The CARB oversees regional or local air quality management or air pollution control districts that are charged with developing attainment plans for the areas over which they have jurisdiction. CARB grants these regional or local air districts explicit statutory authority to adopt indirect source regulations and transportation control measures, including measures to encourage the use of ridesharing, flexible work hours, or other measures that reduce the number or length of vehicle trips. Through its Mobile Sources Program, CARB has developed programs and policies to reduce emissions from on-road heavy-duty diesel vehicles. Specifically, the On-Road Heavy-Duty Diesel Vehicle Regulation requires diesel trucks and buses that operate in the State to be upgraded to reduce emissions. By January 1, 2023, nearly all vehicles must have engines certified to 2010 model year engines or equivalent (California Air Resources Control Board 2022b).

Air Quality Management Plans

The federal Clean Air Act requires areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans. State Implementation Plans are comprehensive plans that describe how an area will attain national ambient air quality standards. State Implementation Plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. California grants air districts explicit statutory authority to adopt indirect source regulations and transportation control measures, including measures to encourage the use of ridesharing, flexible work hours, or other measures that reduce the number or length of vehicle trips. Local air districts prepare State Implementation Plan elements and submit them to CARB for review and approval. CARB forwards State Implementation Plan revisions to the EPA for approval and publication in the Federal Register.

California Air Toxics Program

CARB created a statewide air toxic program in the 1980s, and soon thereafter was the creation of the Toxic Air Contaminant Identification and Control Act of 1983 (AB 1807). The Toxic Air Contaminant Identification and Control Act established the California Air Toxic Program that was designed to lower all exposure to air pollutants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) adds on to AB 1807 by demanding an inventory for all air pollutants, a system where notices are provided to those who are unprotected by the air pollutant, and plans to lower these health risks. AB 1807 requires CARB to implement standards for the ranking and control of the air pollutants. AB 1807 also requires CARB to use the data within the AB 2588 program. Gasoline dispensing facilities are subject to these standards.

Regional/Local

2022 Regional Transportation Plan and Sustainable Communities Strategy for Merced County

The Regional Transportation Plan and Sustainable Communities Strategy for Merced County (Merced County Association of Governments 2022) (RTP/SCS) contains the County's strategy for ensuring that the County transportation system will continue to operate efficiently in the future with sufficient capacity to meet demand and that mobility options are available. The RTP component of the plan focuses on regional transportation infrastructure needs. The SCS components of the plan address planned growth patterns that have been defined by local cities and the County to help reduce vehicle miles traveled consistent with California Senate Bill 375, the Sustainable Communities and Climate Protection Act, which is intended to reduce transportation related greenhouse gas emissions.

The RTP/SCS identifies a range of transportation infrastructure projects and programs to be implemented over time to support transportation efficiency and accommodate planned growth. Improvement projects and programs range from road capacity improvements to bicycle, transit, rail, and complete streets projects. The RTP/SCS includes one program that affects transportation in Delhi - expanded micro transit service.

San Joaquin Valley Air Pollution Control District Regulations

On August 19, 2021, the air district approved the 2018 PM_{2.5} Plan for the San Joaquin Valley (2018 PM_{2.5} Plan), which revises the district's previous PM_{2.5} attainment plan to establish a new attainment target for the 1997 annual PM_{2.5} standard. The air basin would have met this standard by the projected attainment target of 2020, but for significant effect of wildfire smoke in addition to data collection issues at the air district air monitoring site in Bakersfield. Based on implementation of the control strategy in the 2018 PM_{2.5} Plan, modeling has shown that the air basin is on track attain the 1997 annual PM_{2.5} standard by 2023, if not earlier (SJVAPCD 2021).

Criteria Air Pollutant Emissions

The air district has adopted various rules and regulations to implement the 2018 PM_{2.5} Plan and address ozone and particulate matter emissions in the air basin. The following air district rules and regulations apply to the proposed project:

- Rule 2010: Requires that any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate.
- Rule 2201, New Source Review Rule: is a major component of the district's attainment strategy. Rule 2201 provides mechanisms, including emission trade-offs, by which permits for new or modified stationary sources may be granted, without jeopardizing the attainment or maintenance of ambient air quality standards by ensuring a no net increase in emissions above specified thresholds for all nonattainment pollutants and their precursors.
- Rule 4001, New Source Performance Standards, and Rule 4002, National Emissions Standards for Hazardous Air Pollutants: identify standards, criteria and compliance requirements for new sources of air pollution, including toxic air contaminant emissions.
- Rule 4101, Visible Emissions: provides visibility standards and criteria for discharge of any air contaminant other than water vapor.
- Rule 4102 Nuisance: states a person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- Rule 4601, Architectural Coatings: limits volatile organic compound emissions from architectural coatings, including the storage, cleanup and labeling of such coatings.
- Rule 4641, Cutback, Slow Cure, and Emulsified Asphalt Paving and Maintenance Operations, restricts the application and manufacturing of certain types of asphalt for paving and maintenance operations (would apply to both construction and post-construction activities).
- Rule 4692, Commercial Charbroiling: limits VOC and PM₁₀ emissions from commercial charbroiling at restaurants. Chain-driven char broilers that cook 400 pounds or more of meat in any calendar week or 10,800 pounds in any calendar year must be equipped with a catalytic oxidizer that has a control efficiency of at least 83 percent for PM₁₀ emissions and a control efficiency of at least 86 percent for VOC emissions. Annual or one-time reports are required for all other charbroiling operations. Underfired char broilers subject to the rule must register each piece of equipment and maintain weekly records.

- Rule 9510, Indirect Source Review: addresses reduction measures for ozone precursor and PM₁₀ emissions from new land use development projects. New projects that would generate substantial air pollutant emissions are subject to this rule. The rule is the result of state requirements outlined in the regions' portion of the state implementation plan in compliance with the Clean Air Act. Residential and commercial projects that propose greater than 50 dwelling units and greater than 2,000 square feet of commercial space are subject to this rule (SJVAPCD 2015). Rule 9510 requires projects to mitigate both construction and operational period emissions by applying the air district-approved mitigation measures and paying fees to support programs that reduce emissions. The following performance standards apply to construction exhaust emissions:
 - 20 percent reduction from unmitigated baseline in total NOx exhaust emissions; and
 - 45 percent reduction from unmitigated baseline in total PM10 exhaust emissions.

The following performance standards apply to operational emissions:

- 33.3 percent of the total operational NOx emissions from unmitigated baseline; and
- 50 percent of the total operational PM10 exhaust emissions from unmitigated baseline.

Fees apply to the unmitigated portion of the emissions and are based on estimated costs to reduce the emissions from other sources plus estimated costs to cover administration of the program. In accordance with Rule 9510, project applicants are required to provide air impact assessments to the air district, demonstrating compliance with the rule.

The air district controls fugitive dust PM₁₀ emissions through Regulation VIII, the purpose of which is to reduce ambient concentrations of PM₁₀ by requiring actions to prevent, reduce or mitigate anthropogenic (human caused) fugitive dust emissions. Emissions reduction measures also reduce PM_{2.5} emissions. This applies to activities such as construction, bulk materials, open areas, paved and unpaved roads, material transport, and agricultural areas. Sources regulated are required to provide dust control plans that meet the regulation requirements. Fees are collected by the air district to cover costs for reviewing plans and conducting field inspections.

Air quality emissions thresholds are found on the air district website. Guidance and methodology for analysis of air quality impacts are provided in the GAMAQI. Projects that do not exceed air district criteria pollutant emissions volume thresholds would not conflict with or obstruct implementation of the air quality plan.

Toxic Air Contaminant Regulations

Toxic air contaminants are regulated by the air district using a risk-based approach. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks. In general, a health risk assessment is required if screening

suggests that projected emissions of a specific air toxic compound from a proposed new or modified stationary source may pose a public health risk. A health risk assessment evaluates the chronic, long-term health effects, calculating the increased risk of cancer as a result of exposure to one or more toxic air contaminants for the source in question.

The State of California Office of Environmental Health Hazard Assessment (OEHHA) and CARB develop recommended methods for conducting health risk assessments. The most recent guidance from OEHHA was published in 2015. The air district has adopted the OEHHA 2015 guidelines as part of its Policy APR-1905 Risk Management Policy for Permitting New and Modified Sources and Policy APR-1906 Framework for Performing Health Risk Assessments. Air district significance thresholds for health risks are listed in Policy APR-1906.

Merced County General Plan

The following policies of the Merced County general plan are applicable to the proposed project.

Policy LU-10.9: Air Quality Management Coordination, calls for coordination with the air district and neighboring jurisdictions in the San Joaquin Valley Air Basin to ensure regional cooperation on cross-jurisdictional and regional transportation and air quality issues, and to establish parallel air quality programs and implementation measures, such as trip reduction ordinances and indirect source programs.

Policy LU-10.10: San Joaquin Valley Air Pollution Control District Consultation, requires consultation with the air district during CEQA review. Ensure that development projects are submitted to the District for CEQA comments and review of air quality analysis.

Policy CIR-1.3: Transportation Efficiency. Encourage transportation programs that result in more efficient energy use, reduce greenhouse gas emissions and noise levels, and improve air quality.

Policy AQ-1.1: Energy Consumption Reduction. Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.

Policy AQ-1.2: Business Energy Reduction Strategies. Encourage all businesses to: replace high mileage fleet vehicles with more efficient and/or alternative fuel vehicles; increase the energy efficiency of facilities; transition toward the use of renewable energy instead of non-renewable energy sources; adopt purchasing practices that promote emissions reductions and reusable materials; and increase recycling.

Policy AQ-1.11: Truck-Related Development. Discourage development that causes significant increases in truck traffic on roads that are not capable of accommodating truck traffic due to pavement section deficiency or other capacity limitations, unless adequate mitigation through fees or improvements in required as part of the permit approval.

Policy AQ-2.1: Air Quality Plan Compliance. Require all development projects to comply with applicable regional air quality plans and policies.

Policy AQ-2.2: Development Review Process. Use the development review process to achieve measurable reductions in criteria pollutants, toxic air contaminants, and greenhouse gas emissions.

Policy AQ-2.3: Cumulative Impacts. Encourage the reduction of cumulative air quality impacts produced by projects that are not significant by themselves, but result in cumulatively significant impacts in combination with other development.

Policy AQ-2.4: Mitigation Require that local and regional air quality impacts identified during CEQA review for projects reviewed and approved by the County are consistently and fairly mitigated.

Policy AQ-2.7: Air District Best Performance Standards. Require the County to use the Best Performance Standards adopted by SJVAPCD during the development review and decision-making process to ensure new projects meet the targets set by the district.

Policy AQ-4.1: Decrease Vehicle Miles Traveled. Require diverse, higher-density land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled.

Policy AQ-4.4: Transportation Alternatives. Require employers and developers to provide employees and residents with attractive, affordable transportation alternatives, such as transit stops, van pool pick-up and drop-off locations, and biking paths/storage.

Policy AQ-4.6: Non-Motorized Transportation. Encourage non-motorized transportation corridors within and between communities.

Policy AQ-5.1: Residential Buffers. Require effective buffers between residential and other sensitive land uses, and nonresidential land uses that generate hazardous air emissions such as highways (e.g., I-5 and SR-99), trucking centers, gasoline dispensing facilities, and dry cleaners. Effective buffers shall be determined by requiring consultation with the SJVAPCD for any project that may have a health risk impact, including those projects that would otherwise appear to be exempt from CEQA requirements.

Policy AQ-6.1: Particulate Emissions from Construction. Support the San Joaquin Valley Air Pollution Control District's efforts to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible and consistent with State and Federal regulations.

Policy AQ-6.3: Paving Materials. Require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Policy AQ-6.6: Prohibition on Wood Stoves. Prohibit wood stoves and wood burning heaters in all newly constructed residences in unincorporated Merced County that have access to natural gas. Natural gas stoves have substantially lower PM₁₀ and PM_{2.5} emissions as compared to wood stoves.

Policy AQ-6.8: Voluntary Emissions Reduction Agreement. Require all project applicants, where project emissions for any criteria pollutant have been evaluated to exceed SJVAPCD significance thresholds, to consult with the SJVAPCD regarding the establishment of a Voluntary Emissions Reduction Agreement between the applicant and the SJVAPCD. Support the SJVAPCD in its efforts to fund the Emission Reduction Incentive Program.

Delhi Community Plan

The Delhi Community Plan does not include policies that directly address air quality. However, several policies for other topics would directly or indirectly reduce air pollutant emissions by reducing vehicle trip numbers and/or lengths, or by reducing energy demand. Representative examples are as follows:

Implementation Measure LU 1.1.b - Land designated Medium or High Density Residential should be located near schools, parks, commercial and business centers, and major streets.

Policy LU 2.1 - Provide a mix of commercial and employment generating land use designations with infrastructure and services to meet the present and future needs of Community residents including Neighborhood Commercial, General Commercial, Business Park, Industrial, as well as, providing economic opportunity in Mixed Use designated areas.

Implementation Measure LU 2.1.d - Neighborhood Commercial and Mixed Use land use designations shall support neighborhood retail, restaurants, and services.

Implementation Measure CI 1.1.1 - Neighborhoods should be designed to interconnect with surrounding neighborhoods. This may be accomplished through the use of a grid or modified grid network or the use of interconnected cul-de-sacs. Dead end cul-de-sacs that do not provide for pedestrian movement are strongly discouraged except where necessary to provide for the development of odd shaped parcels.

Implementation Measure CI.1.1.m - A pedestrian connection shall be provided at the end of the cul-de-sac for access to adjoining pathways, open spaces, or streets. In conditions where arterials or major collectors with walls adjoin residential areas, open ended cul-de-sacs shall be used to create wall openings with pathway connections, unless a continuous noise wall is demonstrated to be required based on a noise study.

Policy CI 3.1 - Establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the Community.

Implementation Measures CI 3.1.d-g, and CI 4.1.a - require that bike paths be integrated into new development, including the project site.

Policy CI 5.1 - Development adjacent to minor and major collectors shall coordinate with Merced County Transit to identify appropriate locations for public transit improvements (i.e., bus pullouts, seating shelters) to encourage public transit use.

Implementation Measures CI 5.1.a-d require the provision of public transit stops throughout the community, as recommended by the County Transit Authority.

5.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of air quality, as it does on a whole series of additional topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of air quality impacts, or on any subject addressed in the checklist. Rather, with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The County has done so here.

To focus the content of this SEIR on the required supplemental analysis, an initial study checklist using guidance provided in the CEQA Guidelines Appendix G was prepared. The initial study analysis has identified less than significant impacts related to odors and exposures to them. The initial study analysis also concluded that the proposed project was not consistent with the land use development capacity assumptions of the approved community plan, and that the plan would increase sensitive receptor exposures to TAC emissions from State Route 99 and other sources. The initial study checklist is included in this SEIR as an attachment to the Notice of Preparation included in Appendix A. As a result, for purposes of this SEIR, a significant air quality impact would occur if implementation of the proposed plan would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors (residential areas, schools, hospitals, nursing homes) to substantial pollutant concentrations.

The CEQA Guidelines (Section 15064.7) provide that, when available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make determinations of significance. Table 5-6, Air District Thresholds of Significance, presents the air district thresholds of significance for criteria pollutant emissions and significance thresholds for health risks from exposures to TAC emissions.

Pollutant	
NOx	10
ROG	10
PM ₁₀	15
PM _{2.5}	15
SOx	27
CO	100
TACs (Health Risks)	Maximally Exposed Individual Cancer Risk > 20 cases per million persons; and/or Non-cancer Health Risk Chronic and Acute Hazard Index > 1.0
	Cumulative Cancer Risk > 100 cases per million persons; and/or Non-cancer Health Risk Chronic and Acute Hazard Index > 5.0

Table 5-6 Air District Thresholds of Significance

5.4 Analysis, Impacts, and Mitigation Measures

This section includes information, data and analysis regarding air quality issues that is relevant to the proposed project based on the air district's GAMAQI and the thresholds of significance described above. Criteria air pollutant and GHG emissions associated with the construction and operation of the project were predicted using CalEEMod version 2020.4.0. The model results for operational emissions assume compliance with several State regulatory measures that reduce emissions. The assumptions, methodology and model results for operational criteria air pollutant emissions are summarized in the AQ/GHG memo included in Appendix B. The potential construction and operational health risk impact to future and nearby sensitive receptors from exposures to TAC emissions are evaluated in the project health risk assessment prepared by Illingworth and Rodkin (2022). The health risk assessment and its attachments are included in Appendix C.

Consistency with 2018 PM_{2.5} Plan

IMPACT	Inconsistency with Air District Ozone and Particulate Matter	Less than Significant
5-1	Attainment Plans	with Mitigation

Future development of the project site would consist primarily of residential land uses, but also includes a neighborhood commercial site, parks, and land dedications for future development of school facilities and a fire station. New development would generate construction and operational emissions that are subject to compliance with the air district rules and regulations. Project consistency with the air district's 2018 PM_{2.5} Plan is determined by compliance with air district rules presented previously, including Rule 2201, New Source Review, which would apply to new stationary sources such as emergency generators and certain commercial uses such as gas stations or

dry cleaners, and Rule 9510, Indirect Source Review, which applies to construction and operational emissions from development. According to the air district (SJVAPCD 2015, page 78), compliance with Rule 9510 will reduce construction exhaust NOx and PM₁₀ emissions by 20 percent and 45 percent respectively. Compliance with Rule 9510 would reduce operational emissions of NOx and PM₁₀ emissions by 33.3 percent and 50 percent respectively. In addition, Rule 4901 prohibits the use of wood-burning fireplaces and heaters and Regulation VIII requires all projects to reduce or prevent PM₁₀ emissions exposures from construction and calls for the preparation of dust control plans on projects greater than one acre.

Merced County general plan policies presented previously require consistency with the air district's air quality plan and conformance with air district emissions reduction rules and regulations. The proposed project is subject to compliance with the Merced County general plan Policy AQ-2.2, which requires use of the development review process to achieve measurable reductions in criteria pollutants and toxic air contaminants.

As shown in the following discussions, the proposed project would generate criteria air pollutants during construction and operations that would potentially exceed the air district thresholds and result in cumulatively considerable impacts to regional air quality. However, with implementation of mitigation measures 5-1 - 5-3 described below, the proposed project would not conflict or jeopardize implementation of the 2018 PM2.5 Plan, nor would the proposed project result in significant cancer risks to sensitive receptors.

Construction Air Pollutant Emissions



The proposed project would generate construction and operational criteria air pollutant emissions including Ozone and PM for which the air basin is in non-attainment. Project emissions volumes that exceed the air district thresholds would be a significant impact.

Construction Criteria Emissions

Construction activities such as site preparation and grading, building construction, paving and application of architectural coatings would generate short term PM and ozone precursor emissions from equipment exhaust. Development phasing information is not yet available in detail that would be sufficient to model project-specific construction emissions by phase. For this reason and due to limitations of the model defaults to quantify construction emissions on a land area greater than 30 acres, site- and project-specific construction criteria pollutant emissions for non-residential uses were not modeled for this project, and are instead discussed qualitatively.

The proposed project is subject to compliance with the Merced County general plan. Merced County general plan policies AQ-2.1 - 2.1 and AQ-2.7 require all development projects to comply with applicable regional air quality plans and policies, demonstrate measurable reductions in criteria air pollutant emissions during the development review process, mitigate air quality impacts and ensure new projects meet the targets set by the air district. The proposed project is subject to compliance with these policies. Once individual project-specific development information is known, construction criteria pollutant emissions would be modeled and reduced in conformance to the air district's Rule 9510 and Regulation VIII. Implementation of the following mitigation measure ensures that construction criteria air pollutant emissions generated by future individual projects would be reduced to less than significant.

Mitigation Measure

- 5-1 Prior to County consideration of future project-specific entitlements for individual projects within the project site, each project developer shall prepare a project-specific construction emissions management plan. The construction emissions management plan shall address all phases of construction and shall be prepared by an air quality consultant deemed qualified by the County. At minimum, the construction management plan shall include a dust control plan consistent with the San Joaquin Valley Air Pollution Control District (air district) Regulation VIII, in addition to the following items:
 - 1. Quantification of project-specific construction emissions and comparison to air district thresholds;
 - Identification of demonstrable emissions reduction measures that will be implemented in conformance with air district Rule 9510 and Regulation VIII for the reduction of particulate matter and ozone precursors during construction. Emissions reductions measures shall include, but not be limited to, all or a combination of the following measures:
 - a. Utilize the cleanest available off-road construction equipment, including the latest Tier diesel engines on heavy equipment with engines greater than 25 horsepower;
 - b. Utilize alternative fuels and all off-road vehicles and construction equipment less than 25 horsepower;
 - c. Electrify construction sites; and
 - d. Any other construction emissions reductions measures that demonstrably reduce construction PM and NOx emissions.

- 3. The construction management plan shall be submitted to the County of Merced Community and Economic Development Director or his/her designate for review and approval;
- 4. Approved construction emissions measures shall be included on all permits, construction plans and bid documents; and
- 5. The approved construction management plan shall be implemented by the project contractor.

Criteria Air Emissions

Operational criteria emissions volumes were analyzed using CalEEMod and the results are presented in Appendix B. Model inputs were adjusted to reflect emissions reductions that will result from connection to the municipal sanitary sewer system, compliance with the State Model Water Efficient Landscape Ordinance, phasing out of gas-powered landscaping tools by 2024 (AB 1346), solid waste diversion of 75 percent (AB 341), and Title 24 Building Energy Efficiency Standards requiring the use of 100 percent renewable sources for certain residential development types. Assumptions, data inputs and methodology applied to the model are described in greater detail in the AQ/GHG memo included in Appendix B. Table 5-7, Unmitigated Operational Criteria Air Emissions, presents the CalEEMod results for operational emissions adjusted as noted above, and identifies whether pollutant volumes exceed air district thresholds.

Table 5-7	Unmitigated Operational Criteria Air Emissions
	0 I

Pollutant	Threshold (Tons/Year)	Project Emissions (Tons/Year)	Threshold Exceeded?
Carbon Monoxide (CO)	100	74	NO
Nitrous Oxide (NO _x)	10	19	YES
Volatile Organic Compounds (VOC/ROG)	10	16	YES
Sulfur Oxides (SO _x)	27	<1	NO
Respirable Particulate Matter (PM ₁₀)	15	24	YES
Fine Particulate Matter (PM _{2.5})	15	7	NO

SOURCE: SJVAPCD 2022b, EMC Planning Group 2022

The proposed project unmitigated operational air pollutant emissions would exceed air district thresholds for NO_x , ROG, and PM_{10} . Analysis and mitigation for each of these effects are discussed below.

Operational NO_x and PM₁₀ Emissions

Operational NO_x and PM₁₀ Criteria Air Pollutant Emissions that Exceed Air District Thresholds

Less than Significant with Mitigation

Compliance with the air district Rule 9510 operational performance standards could result in up to a 33 percent reduction in NO_x emissions and up to 50 percent reduction in PM_{10} emissions from a baseline of unmitigated conditions. The balance of emissions with these reductions would be about 6.3 tons per year of NOx and about 12 tons per year of PM_{10} .

Project design features that would have quantifiable emissions reduction benefits by reducing vehicle trip volumes and associated vehicle miles traveled include: 1) an extensive on-site pedestrian network, including combined pedestrian use of the Class I bike pathway; and 2) extending transit service to serve the project site (described in greater detail in Section 7.0, Greenhouse Gases). CalEEMod was adjusted to include these traffic-reducing measures and to include an applicant-proposed emissions reduction measure of eliminating the use of natural gas in all residential uses. The model results are presented as mitigated operational emissions in Appendix B, and are summarized and compared with district thresholds in Table 5-8, Mitigated Operational Emissions with Project Design Features.

Pollutant	Threshold (Tons/Year)	Emissions with Design Features (Tons/Year)	Threshold Exceeded?	
Carbon Monoxide (CO)	100	70	NO	
Nitrous Oxide (NO _x)	10	16	YES	
Volatile Organic Compounds (VOC/ROG)	10	15	YES	
Sulfur Oxides (SO _x)	27	<1	NO	
Respirable Particulate Matter (PM10)	15	23	YES	
Fine Particulate Matter (PM _{2.5})	15	6	NO	
SOURCE: SJVAPCD 2022b, EMC Planning Group 2022				

 Table 5-8
 Mitigated Operational Emissions with Project Design Features

As shown in Table 5-8, criteria air pollutant emissions would be reduced, but NO_x, PM₁₀ and ROG emissions would still exceed air district thresholds, which is a potentially significant impact. ROG impacts are described in the following section. As shown in the model result spreadsheets in Appendix B, mobile sources generate the greatest volumes of operational NO_x and PM₁₀ emissions.

The air district recommends a number of mitigation measures consistent with the 2018 $PM_{2.5}$ Plan that, if implemented would further reduce NO_x and PM_{10} emissions. The mitigation measures are

derived from the air district's list of Emission Reduction Clean Air Measures (SJVAPCD 2022c). These measures include but are not limited to: incorporating electric vehicle charging infrastructure, improving walkability, increasing access to transit, incorporating affordable and below market rate housing, incorporating traffic calming measures, providing transit subsidies, incorporating employee vanpools and/or shuttle services (and preferential parking for them), limiting vehicle idling to five minutes, and exceeding Title 24 building energy efficiency standards.

In addition to eliminating the use of natural gas in residential uses, the applicant has also indicated an intent to install electric vehicle support infrastructure consistent with mandatory and Tier 2 voluntary measures contained in the CALGreen code. These measures are designed to make electric vehicle parking and electric vehicle charging easily accessible in single- and multi-family development projects and in non-residential projects, including commercial uses. The primary purpose is to support more widespread use of electric vehicles powered by electricity from the state grid that is increasingly being generated by renewable energy sources. To be conservative, the emissions reductions from the electric vehicle support improvements have not been quantified.

Providing bicycle paths is also a beneficial feature that can be demonstrated as part of the proposed project, but must be combined with other bicycle support features whose inclusion in future individual development projects is uncertain at this time. Additionally, there are other community plan policies and implementation measures and general plan policies that could result in criteria air pollutant reductions; however, it is uncertain at the current level of development planning whether or to what extent the policy direction will be translated into physical improvements or actions by future developers that would result in emissions reductions benefits.

Mitigation Measure GHG-1 (refer to Section 7.0, Greenhouse Gases) requires that developers of future individual projects to prepare GHG reduction plans. Each GHG reduction plan must identify planned reduction measures and the volumetric GHG reductions associated with each, and provide evidence supporting the level of reduction. All measures within the control of individual project applicants must be implemented and operational prior to occupancy of the associated project. Onsite mitigation is prioritized. Emissions reduction measures that reduce vehicle miles traveled not only reduce GHG emissions, but also reduce mobile source criteria air pollutant emissions. Similar to mitigation measure GHG-1, implementation of a criteria air pollutant emissions reduction plan would ensure compliance with the air district's Rule 9510 and Regulation VIII operational performance standards for criteria pollutant emissions reductions.

Consistent with air district emissions reduction measures and Merced County general plan policies that require emissions reductions in compliance with air district regulations, implementation of the following mitigation measure is required to ensure that PM_{10} and NOx emissions from future individual projects would not exceed air district thresholds and consequently, would not result in significant air quality impacts.

Mitigation Measure

5-2 Prior to County consideration of future project-specific entitlements for individual projects within the project site, each project developer shall prepare a criteria pollutant emissions reduction plan. The plans shall be prepared by a qualified air quality consultant and shall include measures that demonstrably reduce operational NOx and PM₁₀ emissions consistent with the San Joaquin Valley Air Pollution Control District Rule 9510 emissions reductions performance thresholds for operational NOx (33 Percent) and PM₁₀ (50 percent).

The criteria air pollutant emissions reduction plan shall be submitted to the County of Merced Community and Economic Development Director or his/her designate for review and approval; the approved emissions reduction measures shall be included on all permits, construction plans and bid documents.

The approved criteria air pollutant emissions reduction plan shall be implemented by the project contractor.

Implementation of mitigation measure AQ-2 would ensure that the NO_x and PM_{10} emissions generated during operations of future individual development projects would be reduced to less than significant.

Operational ROG Emissions



Even with the project design features and applicant-proposed mitigation incorporated into the proposed project, operational ROG emissions would exceed the air district threshold of 10 tons per year. However, as described below, ROG emissions will be reduced through uniformly applied state regulations, with associated reductions sufficient to reduce ROG emissions to less than significant.

ROG emissions would need to be reduced by five tons per year to meet the threshold. According to the model results, the greatest volume of ROG emissions would be generated by area sources and of those, consumer products would generate about eight tons per year and architectural coatings would generate just under two tons per year. Model estimates are assumed to be conservative and actual area source emissions may differ once project-specific details are known.

CARB defines consumer products as chemically formulated products used by household and institutional consumers including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products, lawn and garden products, disinfectants; sanitizers; aerosol paints,

aerosol adhesives, including aerosol adhesives used for consumer, industrial, and commercial uses; and automotive specialty products. Under State law, CARB is responsible for controlling emissions from consumer products and mobile sources (except where federal law preempts CARB's authority). Local air districts are primarily responsible for controlling emissions from stationary and area-wide sources (with the exception of consumer products) through rules and permitting programs. Consequently, regulatory restrictions on sources of consumer product emissions are not available through air district or land use regulations. CARB's proposed strategy for the 2022 State Implementation Plan (CARB 2022c) calls for establishing standards for regulating VOC/ROG emissions from consumer products starting in 2027, well before the assumed full project buildout date of 2045. While some development may occur within the site before that date, the amount would be limited. It is presumed ROG emissions from consumer products will be substantially reduced through state-led reduction strategies, and that the reductions will more than exceed the five tons per year by which cumulative development within the site would exceed the threshold of significance. Therefore, solely through state action, the ROG impact would be reduced to less than significant, with mitigation required for individual future projects within the site.

Mobile sources would generate about six tons of ROG annually. Implementation of mitigation measures GHG-1 and AQ-2 would further reduce mobile-source ROG emissions generated by future development.

Exposures to Toxic Air Contaminant Emissions

The air district thresholds for determining the significance of health risks are based on increased cancer risk and a hazard index (refer to Table 5-6). Health risks were evaluated in the health risk assessment prepared by Illingworth and Rodkin (2022) through analysis of exposures to TAC emissions during construction, and during operations from exposures to nearby freeway vehicle and rail TAC emissions. The health risk assessment used the recent 2015 OEHHA risk assessment guidelines and air district recommended procedures for applying the OEHHA guidelines. The health risk assessment methodology, evaluation, and results are presented in greater detail in the health risk assessment in Appendix C.

The proposed project includes commercial uses that may include stationary sources of emissions (described previously); however, these types of uses would require permits from the air district and must meet air district thresholds as conditions of permit approval. The increased health risks from exposures to future stationary sources, if developed, would be less than significant due to required compliance with permit conditions, so are not discussed further. Exposures to TAC emissions from mobile sources that exceed the air district cancer risk non-cancer health risk thresholds would be a significant impact and are addressed in this section.

Construction Health Risks

IMPACT

5-5

Expose Sensitive Receptors to Toxic Air Contaminants During Construction Less than Significant with Mitigation

The proposed project would expose sensitive receptors to construction equipment exhaust and dust emissions that would potentially lead to significant health risk impacts. The proposed project is subject to compliance with Regulation VIII and Rule 9510, both of which would reduce equipment emissions and exposures to TACs from them. However, due to the size of the proposed development area and project phasing (refer to Section 4.0, Project Description), information identifying project construction activity such as land area to be disturbed by phase, or the construction duration or number and type of equipment per phase, are not available in detail sufficient to quantify the health risks of construction emissions over time or phase, or to quantify emissions/health risk reductions from regulatory compliance with any certainty. Therefore, the health risk assessment recommends a programmatic approach to address health risks from construction. Project level analysis of health risk impacts would be required that identify appropriate measures to minimize exposures to construction exhaust emissions and reduce related health risks below the air district thresholds.

In addition to compliance with air district Rule 9510 and Regulation VIII, implementation of the following mitigation measure ensures that project-level analysis is prepared and appropriate emissions reduction measures are implemented that reduce construction health risks to less than significant.

Mitigation Measure

5-3 Prior to County consideration of future project-specific entitlements for development within the project site, each project developer shall prepare a project-specific construction health risk assessment. The health risk assessment shall be prepared by an air quality consultant qualified to conduct health risk assessments consistent with the San Joaquin Valley Air Pollution Control District guidance. The health risk assessment shall be submitted to the County of Merced Community and Economic Development Director or his/her designate for review and approval.

If the assessment results find that exposures to construction emissions would not exceed air district standards, no mitigation is required.

If the assessment identifies that exposures would exceed the air district standards, the developer shall prepare a Construction Emissions Reduction Plan that identifies demonstrated emissions reduction measures to reduce emissions and associated health risks below the standards. The Construction Emissions Reduction Plan shall be submitted to the County of Merced Community and Economic Development Director

for review and approval. The plan shall include one or a combination of the following measures and shall be implemented by the project contractor during all phases of construction:

- a. Off-road equipment (more than 25 horsepower) and on on-road haul trucks to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) shall achieve appropriate project wide fleet-average NOx and PM₁₀/PM_{2.5} reductions, such that emissions do not exceed SJVAPCD significance thresholds. Acceptable options for reducing emissions include the use of late model engines (e.g., engines meeting U.S. EPA Tier 4 standards), low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- b. Provide line power during the early phases of construction to minimize the use of diesel-powered stationary equipment, such as generators.
- c. All on-road HDDT heavy-duty trucks with a gross vehicle weight rating of 33,000 pounds or greater used at the project site (such as haul trucks, water trucks, dump trucks concrete trucks) shall be model year 2010 or newer.
- d. Phase construction activities to reduce daily emissions.

Operational Health Risks to Off-Site Receptors

IMPACT 5-6 Expose Off-Site Sensitive Receptors Toxic Air Contaminants During Project Operations

Less than Significant

The health risk assessment predicted emissions from the various sources of TACs that may be associated with the proposed land uses, primarily project-related vehicle travel and commercial operations. The methodology included using dispersion modeling, historical meteorological data and calculation of health risks at off-site receptor locations using air district recommended risk assessment methods for infant, child, and adult exposures for residential receptors, daycare infants and children, and for off-site worker exposure based on a 70-year (long term) exposure. Mobile-source TAC concentrations were modeled using EMFAC and AERMOD dispersion modeling for traffic volumes on nearby segments for Bradbury Road, Vincent Road, Shanks Road, and State Route 99. Additionally, UPRR activity was modeled using EPA emission factors for locomotives and CARB adjustment factors for California fuels. New residents would generate traffic that would contribute to traffic volumes on the modeled roadways including State Route 99.

The health risk assessment concluded that at all off-site receptor locations, the infant/child cancer risks from exposures to operational emissions at buildout of the project site would be 1.9 cases per million and worker cancer risks would be 0.1 cases per million, both of which are below the air district standard of 20 cases per million. Therefore, the cancer risk impacts at off-site receptors from

exposures to project operational emissions would be less than significant. Compliance with the air district Rule 9510 performance standards to control operational PM_{10} would further reduce health risks from project operations.

Operational Health Risks to New On-Site Receptors

IMPACT 5-7

Expose New On-Site Sensitive Receptors to New and Existing Sources of Toxic Air Contaminants Less than Significant with Mitigation

Effects of Potential Project-Generated Stationary TAC Sources

Proposed future development includes residential, neighborhood commercial, park uses, and schools uses. The health risk assessment determined that these uses would not be a source of significant TAC emissions from stationary sources, and thus, would not expose existing sensitive receptors or new sensitive receptors located within the project site to TAC levels that could have a significant impact on these receptors.

Effects of Potential Project-Generated and Existing Mobile-Source TACs

Traffic generated by future development within the project site would contribute to existing sources of mobile source TACs on local roadways and on State Highway 99. The year 2045 was assumed to be the first full year of operation and was used as the year of analysis for generating emission rates. Vehicle emission rates are anticipated to decrease in the future due to improvements in exhaust systems and turnover of the fleet from older, more polluting vehicles, to newer cleaner vehicles. Daily traffic generation and trip distribution was provided in the transportation analysis prepared for the project as described in Section 10.0, Transportation.

Increased cancer and non-cancer health risks associated with on-site receptor exposures to vehicle emissions from the project itself, traffic on State Route 99 (including the project contribution to that traffic) and train operations on the adjacent UPRR track were calculated. This was done using the modeled annual TAC concentrations and air district recommended risk assessment methods for infant, child, and adult exposures as appropriate for residential receptors.

As reported in the health risk assessment, the health index for non-cancer air health risks to existing and future on-site sensitive receptors would be below the air district threshold of 1.0 for the entire site. Therefore, the acute or chronic non-cancer health risks for on-site receptors would be less than significant.

The cancer risk from on-site exposures to mobile sources of TAC emissions from State Route 99 (including the project contribution of traffic to the highway) combined with UPRR operations would exceed the air district threshold of 20 cases per million for receptors across a significant portion of the site adjacent to the highway and UPRR. Exposures along Bradbury Road, Vincent Road, and the segment of Shanks Road furthest from State Highway 99 and the UPRR would not be above the threshold.

A diagram showing proposed land uses and health risk contours across the project site from exposures to TACs from State Highway 99 and UPRR operations is presented in Figure 5-1, Uncontrolled Cancer Risk Contours. Uncontrolled exposures assume no mitigation is applied to reduce on-site sensitive receptor exposures to TACs. Sensitive receptors that would be located between the western boundary of the site and the 20 cases per million contour in Figure 5-1 would be exposed to increased cancer risks that exceed the air district threshold.

The health risk assessment recommends that new residences located within area bound by the uncontrolled 20 cases per million contour be fitted with air filtration systems to reduce significant cancer risks. Proper installation, use and maintenance of air filters with a minimum efficiency reporting value (MERV) of MERV13 is reported to achieve an 80 percent reduction in pollutant particle concentrations; MERV16-rated filtration systems are capable of reducing particle concentrations by 90 percent.

Figure 5-2, MERV13 Filtration Controlled Cancer Risk Contours, presents an adjusted 20 case per million contour that represents the effectiveness of proper installation, use and maintenance of MERV13-rated filtration systems in new residences. MERV13 filtration would reduce most, but not all exposures and related significant cancer risks for much of the site. The 20 cases per million contour would shift much closer to the western project boundary. Residences that would remain within the MERV13 adjusted 20 cases per million contour would still be exposed to cancer risks greater than the air district threshold. As a result, the cancer risk impact for these residents would be reduced, but not to a less-than-significant level.

Figure 5-3, MERV16 Filtration Controlled Cancer Risk Contours, presents a second adjusted 20 cases per million contour that represents the additional effectiveness of proper installation, use and maintenance of MERV16-rated filtration systems in new residences where exposures would not be sufficiently be reduced using MERV13 filters. A small area planned for residential use would still remain within the 20 cases per million contour. Residents or other sensitive receptors within this small area would remain exposed to significantly increased cancer risks. This is a significant impact.

Implementation of the following mitigation measures would reduce significant cancer risk impacts to proposed on-site sensitive receptors to a less-than-significant level.

Mitigation Measures

- 5-4 Developers of individual residential projects or other projects that include sensitive receptors shall reduce cancer risk exposures from toxic air contaminants generated by traffic on State Highway 99 and train traffic on the UPRR using the following methods:
 - a. MERV13 filtration systems shall be installed in all residential buildings or other buildings housing sensitive receptors that are planned within the 20 cases per million contour; with the possible exception of sensitive receptors identified in item "b";





 \mathbf{C}

 $\mathbf E$

Source: Illingworth & Rodkin 2022

Figure 5-1 Uncontrolled Cancer Risk Contours

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 \mathbf{E}

Not to scale

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Source: Illingworth & Rodkin 2022

Figure 5-2

MERV13 Filtration Controlled Cancer Risk Contours

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 \mathbf{E}

Not to scale

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Source: Illingworth & Rodkin 2022

Figure 5-3

MERV16 Filtration Controlled Cancer Risk Contours

Delhi Community Plan Supplemental EIR

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- MERV16 filtration systems shall be installed on all residential buildings or other buildings housing sensitive receptors that are planned in areas where increased cancer risk is not reduced to less than 20 cases per million with incorporation of MERV13 filtration systems; and
- c. No residential development or other land uses that include sensitive receptors shall be permitted where use of MERV13 and MERV16 filtration systems does not reduce cancer risk to less than 20 cases per million.

Prior to issuance of building permits for future individual residential projects or other use types that include sensitive receptors, each developer shall identify the buildings required to be outfitted with MERV13- or MERV16-rated filtration systems on a unit unit-by-unit basis, with individual air intake and exhaust ducts ventilating each unit separately, or through a centralized building ventilation system, as needed. Each developer shall provide evidence from an air quality specialist qualified in dispersion modeling that exposures to TACs are reduced by 80 and 90 percent such that cancer risk is reduced to less than 20 cases per million. The evidence shall be verified by the Community and Economic Development Department Director/Director's Designee prior to issuance of building permits.

5-5 Each project developer required to implement mitigation measure 5-4 shall prepare and implement an ongoing maintenance plan for buildings required to be fitted with air filtration systems per mitigation measures 5-4. The maintenance plan shall be included in the covenants, codes, and restrictions for all such projects; development agreement; or other mechanism deemed appropriate by the County. The maintenance agreement shall:
1) require cleaning, maintenance, and monitoring of the affected buildings for air flow leaks, 2) include assurance that new owners or tenants are provided information on the ventilation system, and 3) include provisions that fees associated with owning or leasing a unit(s) in the building include funds for cleaning, maintenance, monitoring, and replacements of the filters, as needed. The ongoing maintenance plan is subject to the review and approval of the Community and Economic Development Department Director.

Implementation of mitigation measures 5-4 and 5-5 would reduce the increase in cancer risk to future on-site residents and other sensitive receptors to a less-than-significant level.

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6.0 Biological Resources

This section of the SEIR assesses whether the impacts and mitigation measures included in the *Draft Environmental Impact Report for the Delhi Community Plan* (hereinafter "community plan EIR") adequately address the environmental impacts of the proposed project on biological resources or whether new or more severe significant environmental impacts are possible as a result of the proposed project. This determination is made by identifying whether changes in circumstances and/or new information is available that could result in significant impacts that are not already identified and evaluated in the community plan EIR, and/or whether characteristics of the proposed project could result in significant impacts not already identified and evaluated in the community plan EIR.

This section addresses existing biological resources on the project site; the federal, state, and regional/local regulatory framework pertaining to biological resources; and anticipated impacts to biological resources as a result of the proposed project. This evaluation is based on a reconnaissance field survey conducted by an EMC Planning Group biologist and a review of existing scientific literature, aerial photographs, technical background information, and policies applicable to projects located in the Town of Delhi and Merced County.

Information in this section is derived from various sources including:

- Delhi Community Plan (Merced County 2005);
- Draft Environmental Impact Report for the Delhi Community Plan EIR (Merced County 2005);
- 2030 Merced County General Plan (Merced County 2013);
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2022);
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2022); and
- U.S. Fish and Wildlife Service (USFWS) *Endangered Species Program* (USFWS 2022a) and National Wetlands Inventory (USFWS 2022b).

EMC Planning Group senior biologist Patrick Furtado, M.S. conducted a reconnaissance-level biological survey at the project site on April 11, 2022 to document existing plant communities and wildlife habitats, and to evaluate the potential for special-status biological resources to occur on the

site. Qualitative observations of plant cover, structure, and species composition were used to determine plant communities and wildlife habitats. Habitat quality and disturbance levels were documented.

Responses to the Notice of Preparation

A comment on the NOP from CDFW was received on May 5, 2022. CDFW recommended evaluating potential impacts to the following special status species: the State threatened Swainson's hawk (*Buteo swainsoni*), the State threatened tricolored blackbird (*Agelaius tricolor*), and the State species of special concern burrowing owl (*Athene cunicularia*), with mitigation provided to reduce impacts to less than significant. CDFW also encourages implementation of all ground disturbing projects to be conducted during the bird non-nesting season (mid-September through January). The NOP and comment letters on the notice are included in Appendix A.

6.1 Environmental Setting

All species observed during the reconnaissance-level biological survey were recorded in field notes, along with information on plant communities and wildlife habitats. Qualitative observations of plant cover, structure, and species composition were used to determine plant communities and wildlife habitats. Plant species were identified in the field or collected for subsequent identification. Searches for reptiles and amphibians were performed by overturning and then replacing rocks and debris, as well as assessment of potentially suitable habitat areas. Birds were identified by visual and/or auditory recognition; mammals were identified by diagnostic signs (including scat and tracks).

Existing Conditions

The proposed project site is located on approximately 273 acres within the community of Delhi in unincorporated Merced County. The project site is bound by Bradbury Road on the north, Vincent Road on the east, Shanks Road on the south, and State Route 99/Union Pacific Railroad on the west. A Turlock Irrigation District canal delineates the northwest boundary, as shown on Figure 3-3, Aerial Photograph.

The site is situated on the Turlock U.S. Geological Survey (USGS) 7.5-minute quadrangle map, and has a generally flat topography and an approximate elevation of 117 feet above sea level.

The site is within the Central Valley Bioregion, which encompasses a diversity of plant communities, which range from oak woodlands and grasslands to riparian forests. The bioregion is also California's top agricultural area.

The climate in the area is Mediterranean, with hot and dry summers, and winters tending to be cool and wet. Most of the annual rainfall occurs between the months of December and March. The soil types mapped across the project site are predominantly Delhi sand, Dello sand, and Hilmar loamy sand, all from alluvial parent materials (USDA NRCS 2022). Several residences are located on the project site, which is otherwise undeveloped and primarily in agricultural use. Other features include unimproved farm roads, agricultural drainage ditches, and agricultural irrigation canals. The surrounding land is predominantly in agricultural use.

Several off-site water and sewer infrastructure improvements are required to serve the project as described and illustrated in Section 4.0, Project Description and shown on Figures 4-8, Off-Site Water Infrastructure Requirements and Figure 4-9, Off-Site Wastewater Infrastructure Requirements. These improvements would trigger based on demands of the project, funded by the project applicant, and constructed by the Delhi County Water District. The proposed water pipeline on the west side of the project extends from well number 9 within existing road rights-of-way on the southwest side of Highway 99, under the Highway, and north along the Turlock Irrigation District canal infrastructure easement before heading within existing road rights-of-way east along Bradbury Road. The proposed water pipeline on the east side of the project extends from the intersection of North Avenue and Vincent Road within existing road rights-of-way from the intersection of North Avenue and Vincent Road south to El Capitan, then southeast along 4th Street, and south along 6th Street to an existing connection at 3rd Street.

Plant Communities and Wildlife Habitats

Figure 6-1, Habitat Map, shows plant communities and wildlife habitats mapped on the project site.

Developed Land Cover

Developed land cover areas are those that have been altered significantly by humans and may contain buildings, landscaped areas, paved areas, and ruderal vegetation. This land cover type is found in the southeast and northwest corners of the project site where rural residences, outbuildings, and farm infrastructure improvements are found. The vegetation within and around these developed areas consists generally of nonnative horticultural plantings of shrubs and trees. Weedy, ruderal vegetation dominated by nonnative grasses and forbs is also common in these areas.

A significant number of mature trees surrounding the residences provide wildlife habitat. These tree species include blue gum (*Eucalyptus globulus*), Fremont cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), walnut (*Juglans* sp.), olive (*Olea europaea*), Italian cypress (*Cupressus sempervirens*), and China berry tree (*Melia azedaracb*).

Many species of birds were observed utilizing this habitat and likely nesting in the shrubs and trees. These species include yellow-billed magpie (*Pica nuttalli*), California scrub-jay (*Aphelocoma californica*), house sparrow (*Passer domesticus*), house finch (*Haemorhous mexicanus*), Eurasian collared-dove (*Streptopelia decaocto*), European starling (*Sturnus vulgaris*), and rock pigeon (*Columba livia*). The yellow-billed magpie is a USFWS Bird of Conservation Concern. Other bird species which can utilize developed land cover habitat include barn owl (*Tyto alba*), Cooper's hawk (*Accipiter cooperi*), and Anna's hummingbird (*Calypte anna*).

Mammals in these areas would be adapted to disturbed, suburban environments and could include Virginia opossum (*Didelphis virginiana*), striped skunk, (*Mephitis mephitis*), and raccoon (*Procyon lotor*).

Agricultural Land Cover

Agricultural land cover encompasses all areas where the native vegetation has been cleared for agricultural use. Agricultural land cover includes orchard, row-crop, hay and pasture, and disked fallow land. Wildlife habitat quality within areas of agricultural land cover is considered low due to the high level of disturbance from agricultural activities. However, many raptor species, such as Swainson's hawk, depend on this habitat. San Joaquin kit fox and American badger also occasionally rely on this habitat type.

At the time of the biological survey, many of the fields on the project site were fallow and unplanted. Others were planted in a cover crop likely of cultivated oats (*Avena sativa*). The borders of the agricultural fields contained scattered ruderal (weedy) plants, such as non-native cheeseweed (*Malva parviflora*), ripgut brome (*Bromus diandrus*), evening primrose (*Oenothera laciniata*), and devil's lettuce (*Amsinckia tessellata*). Plant cover required by many animal species is likely removed through the regular application of herbicides.

Common wildlife species likely to occur in agricultural areas of the project site include California ground squirrel (*Spermophilus beecheyi*) and small rodents including mice (*Mus musculus*, Reithrodontomys megalotis, and Peromyscus maniculatus) and California vole (*Microtus californicus*). Common reptiles may also occur such as western fence lizard (*Sceloporus occidentalis*) and Pacific gopher snake (*Pituophis catenifer*). Several species of birds were observed in areas of agricultural land cover including western kingbird (*Tyrannus verticalis*), killdeer (*Charadrius vociferus*), American crow (*Corvus brachyrhynchos*), and Brewer's blackbird (*Euphagus cyanocephalus*). Other bird species which can utilize agricultural land cover habitat include red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and great horned owl (*Bubo virginianus*).

Wetlands and Waterways

An irrigation canal operated by the Turlock Irrigation District is located along the northwest edge of the project site. The USFWS's National Wetland Inventory classifies this waterway as "Riverine" habitat. However, the waterway is concrete-lined and well maintained and provides minimum aquatic habitat value for plants and wildlife.

Much of the irrigation at the project site appears to be supplied from underground piping. However, a concrete-lined channel was observed in the northwestern portion of the site. This channel runs south to north until Bradbury Road where it turns west and eventually connects to the main canal described above. The channel does not contain wetland vegetation.


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Special-Status Species with Potential to Occur in the Project Vicinity

Special-status species are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the USFWS or CDFW under the state and/or federal Endangered Species Acts. The special-status designation also includes CDFW Species of Special Concern and Fully Protected species, California Native Plant Society (CNPS) Rare Plant Rank 1B and 2B species, and other locally rare species that meet the criteria for listing as described in Section 15380 of CEQA Guidelines. Special-status species are generally rare, restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.

A search of the CDFW *California Natural Diversity Database* (CDFW 2022) was conducted for the Turlock, Arena, Cressey, Montpelier, Gustine, Stevinson, Hatch, Ceres, and Denair USGS quadrangles to identify potentially occurring special-status plant and wildlife species in the project vicinity. Results are shown on Figure 6-2, Special Status Species with Potential to Occur in the Project Vicinity. Records of occurrence for special-status plants were reviewed for the same USGS quadrangles in the CNPS *Inventory of Rare and Endangered Plants* (CNPS 2022). A USFWS *Endangered Species Program* threatened and endangered species list was also generated for Merced County (USFWS 2022a).

Table 6-1, Special-Status Plant Species with Potential to Occur in Vicinity, and Table 6-2, Special-Status Wildlife Species with Potential to Occur in Vicinity, show special-status species documented within the project vicinity, their listing status and suitable habitat description, and their potential to occur on the site.

Special-Status Plants

Special-status plant species potentially occurring in the project vicinity were evaluated for their potential to occur on the project site. Database search results and the potential for special-status plants to occur on the project site and vicinity are presented in Table 6-1, Special-Status Plant Species with Potential to Occur in the Project Vicinity, and are discussed in in the Analysis, Impacts and Mitigation Measures section, below.

Special-status plant species recorded as occurring in the vicinity of the project site, but are not likely to occur due to lack of suitable habitat include alkali milk-vetch (*Astragalus tener* var. *tener*), Merced monardella (*Monardella leucocephala*), San Joaquin Valley Orcutt grass (*Orcuttia inaequalis*), and heartscale (*Atriplex cordulata* var. *cordulata*).

Suitable habitat for all special-status plant species recorded as occurring in the vicinity of the project site was not found at the project site.

Special-Status Wildlife

Special-status wildlife species potentially occurring in the project vicinity were evaluated for their potential to occur on the project site. Database search results and the potential for special-status

wildlife to occur on the project site and vicinity are presented in Table 6-2, Special-Status Wildlife Species with Potential to Occur in the Project Vicinity, and are discussed in in the Analysis, Impacts and Mitigation Measures section, below.

Special-status wildlife species recorded as occurring in the vicinity of the project site, but are not likely to occur due to lack of suitable habitat include Merced kangaroo rat (*Dipodomys heermanni dixoni*), California tiger salamander (*Ambystoma californiense*), giant garter snake (*Thamnophis gigas*), least Bell's vireo (*Vireo bellii pusillus*), tricolored blackbird (*Agelaius tricolor*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), western pond turtle (*Emys marmorata*), and western spadefoot (*Spea hammondii*).

Special-status wildlife species with a low to medium potential to occur on the project site include, but are not limited to: American badger (*Taxidea taxus*), burrowing owl (*Athene cunicularia*), coast horned lizard (*Phrynosoma blainvillii*), hoary bat (*Lasiurus cinereus*), loggerhead shrike (*Lanius ludovicianus*), Northern California legless lizard (*Anniella pulchra*), pallid bat (*Antrozous pallidus*), San Joaquin kit fox (*Vulpes macrotis mutica*), Swainson's hawk (*Buteo swainsoni*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western red bat (*Lasiurus blossevillii*).

Regulated Trees

The project site contains dozens of native and nonnative trees that would be removed with future development. However, there are no policies or regulations contained in the community or Merced County Code pertaining to damaging or removing trees.

Sensitive Natural Communities

CDFW recognizes wetlands and waterways as sensitive natural communities (described in the wetlands and waterways section above).

Wildlife Movement

Wildlife movement includes migration (usually movement one way per season), inter-population movement (long-term dispersal and genetic flow), and small travel pathways (daily movement within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as foraging or escape from predators, they also provide connection between outlying populations and the main populations, permitting an increase in gene flow among populations. These habitat linkages can extend for miles and occur on a large scale throughout the greater region. Habitat linkages facilitate movement between populations located in discrete locales and populations located within larger habitat areas.

The project site is generally located within an area developed for agricultural uses with limited access to natural corridors. Movement is likely restricted to that of common wildlife species and the project site does not function as a regional wildlife movement corridor or habitat linkage.



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Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Alkali milk-vetch (Astragalus tener var. tener)	//1B.2	Alkaline sites in playas, valley and foothill grassland (on adobe clay), and vernal pools; elevation 1-60m. Blooming Period: March – June.	Unlikely. Suitable habitat not found at the project site.
Alkali-sink goldfields (Lasthenia chrysantha)	//1B.1	Vernal pools. Alkaline; elevation 0-200m.	Unlikely. Suitable habitat not found at the project site.
Brittlescale (Atriplex depressa)	//1B.2	Chenopod scrub, meadows, playas, valley and foothill grassland, and vernal pools. Usually in alkali scalds or alkali clay in meadows or annual grassland; rarely associated with riparian, marshes or vernal pools; elevation 1-320m. Blooming Period: May – October.	Unlikely. Suitable habitat not found at the project site.
California alkali grass (Puccinellia simplex)	//1B.2	Meadows and seeps, chenopod scrub, valley and foothill grasslands, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins; elevation 1-915m. Blooming Period: March – May.	Unlikely. Suitable habitat not found at the project site.
Colusa grass (Neostapfia colusana)	FT/SE/1B.1	Vernal pools, usually in large or deep vernal pool bottoms, adobe soils; elevation 5-110m. Blooming Period: May – August.	Unlikely. Suitable habitat not found at the project site.
Coulter's goldfields (Lasthenia glabrata ssp. coulteri)	//1B.1	Coastal salt marshes and swamps, playas, and vernal pools; elevation 1-1220m.	Unlikely. Suitable habitat not found at the project site.
Delta button-celery (Eryngium racemosum)	/SE/1B.1	Riparian scrub; prefers seasonally inundated floodplain on clay soils; elevation 3-75m. Blooming Period: June – August.	Unlikely. Suitable habitat not found at the project site.
Greene's tuctoria (Tuctoria greenei)	FE/SR/1B.1	Vernal pools, valley and foothill grassland. Dry bottoms of vernal pools in open grasslands, 30-1065m. Blooming Period: May – September.	Unlikely. Suitable habitat not found at the project site.
Hairy orcutt grass (Orcuttia pilosa)	FE/SE/1B.1	Vernal pools; elevation 25-125m. Blooming Period: May – September.	Unlikely. Suitable habitat not found at the project site.
Heartscale (Atriplex cordulata var. cordulata)	//1B.2	Chenopod scrub, valley and foothill grassland, and meadows. Prefers alkaline flats and scalds in the Central Valley, on sandy soils; elevation 1-150m. Blooming Period: April – October.	Unlikely. Suitable habitat not found at the project site.
Heckard's pepper-grass (Lepidium latipes var. heckardii)	//1B.2	Alkaline flats in valley and foothill grassland; elevation 2-200m.	Unlikely. Suitable habitat not found at the project site.
Hispid's bird's-beak (Cordylanthus mollis ssp. hispidus)	//1B.1	Meadows, playas, valley and foothill grassland. In damp alkaline soils, especially in alkaline meadows and alkali sinks with Distichlis sp.; elevation 10-155m. Blooming Period: June – September.	Unlikely. Suitable habitat not found at the project site.
Hoover's calycadenia (Calycadenia hooveri)	//1B.3	Cismontane woodland, valley and foothill grassland. On exposed, rocky, barren soil; elevation 65-260m. Blooming Period: July – September.	Unlikely. Suitable habitat not found at the project site.

Table 6-1 Special-Status Plant Species with Potential to Occur in the Project Vicinity

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on Project Site
Hoover's spurge (Chamaesyce hooveri)	FT//1B.2	Vernal pools, and valley and foothill grassland; pools on volcanic mudflow or clay substrates; elevation 25-140m. Blooming Period: July – August.	Unlikely. Suitable habitat not found at the project site.
Lesser saltscale (Atriplex minuscula)	//1B.1	Chenopod scrub, playas, and valley and foothill grassland. In alkali sinks in sandy, alkaline soils; elevation 20-100m. Blooming Period: May – October.	Unlikely. Suitable habitat not found at the project site.
Merced monardella (Monardella leucocephala)	//1A	Valley and foothill grassland, historically known from Stanislaus and Merced Counties. Known from riverbeds, moist sandy depressions, requires moist subalkaline sands associated with low grassland; elevation 35-100m. Blooming Period: May - August	Unlikely. Suitable habitat not found at the project site.
Prostrate vernal pool navarretia (Navarretia prostrata)	//1B.1	Coastal scrub, valley and foothill grassland, and vernal pools. Alkaline soils in grassland, or in vernal pools; elevation 15-700m. Blooming Period: April – July.	Unlikely. Suitable habitat not found at the project site.
San Joaquin spearscale (Atriplex joaquinana)	/-/1B.2	Alkaline sites in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland; elevation 1-320m. Blooming Period: April – October.	Unlikely. Suitable habitat not found at the project site.
San Joaquin Valley Orcutt grass (Orcuttia inaequalis)	FT/SE/1B.1	Vernal pools, endemic to the San Joaquin Valley; elevation 30-755m. Blooming Period: April – September.	Unlikely. Suitable habitat not found at the project site.
Sanford's arrowhead (Sagittaria sanfordii)	//1B.2	Marshes and swamps. Found in standing or slow-moving freshwater ponds, marshes, and ditches; elevation 0-610m. Blooming Period: May – October.	Unlikely. Suitable habitat not found at the project site.
Spiny-sepaled button-celery (<i>Eryngium spinosepalum</i>)	//1B.2	Vernal pools within valley and foothill grassland. Some sites on clay soils of granitic origin; elevation 100-420m. Blooming Period: April – May.	Unlikely. Suitable habitat not found at the project site.
Subtle orache (Atriplex subtilis)	//1B.2	Alkaline sites in valley and foothill grassland; elevation 40-100m. Blooming Period: August – October.	Unlikely. Suitable habitat not found at the project site.
Succulent owl's-clover (Castilleja campestris var. succulenta)	FT/SE/1B.2	Vernal pools, and valley and foothill grassland. Moist places, often in acidic soils; elevation 25-750m. Blooming Period: April – May.	Unlikely. Suitable habitat not found at the project site.
Vernal pool smallscale (Atriplex persistens)	//1B.2	Vernal pools on alkaline soils; elevation 10-115m. Blooming Period: July – October.	Unlikely. Suitable habitat not found at the project site.
Wright's trichocoronis (Trichocoronis wrightii var. wrightii)	//2B.1	Marshes and swamps, riparian forest, meadows and seeps, and vernal pools. Mud flats of vernal lakes, drying river beds, alkali meadows; elevation 5-435m. Blooming Period: May – September.	Unlikely. Suitable habitat not found at the project site.

SOURCE: CDFW 2022, CNPS 2022

NOTE: Status Codes: Federal (USFWS) FE: Listed as Endangered under the Federal Endangered Species Act. FT: Listed as Threatened under the Federal Endangered Species Act. FC: A Candidate for listing as Threatened or Endangered under the Federal Endangered Species Act. FSC: Species of Special Concern. FD: Delisted under the Federal Endangered Species Act. State (CDFW) SE: Listed as Endangered under the California Endangered Species Act. ST: Listed as Threatened under the California Endangered Species Act. SR: Listed as Rare under the California Endangered Species Act. SC: A Candidate for listing as Threatened or Endangered under the California Endangered Species Act. SSC: Species of Special Concern. SFP: Fully Protected species under the California Fish and Game Code. SD: Delisted under the California Endangered Species Act. CNPS Rare Plant Ranks and Threat Code Extensions

1B: Plants that are considered Rare, Threatened, or Endangered in California and elsewhere.

2B: Plants that are considered Rare, Threatened, or Endangered in California, but more common elsewhere.

.1: Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat).

.2: Fairly endangered in California (20-80% occurrences threatened).

.3: Not very endangered in California (<20% of occurrences threatened or no current threats known).

Species	Status (Federal /State)	Suitable Habitat Description	Potential to Occur on Project Site
American badger (Taxidea taxus)	/SSC	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats. Need sufficient food and open, uncultivated ground with friable soils to dig burrows. Prey on burrowing rodents.	Low Potential. Species known to occur within the vicinity of the project site.
Burrowing owl (Athene cunicularia)	/SSC	Open, dry, annual or perennial grasslands, desert, or scrubland, with available small mammal burrows.	Moderate Potential. Species known to occur within the vicinity of the project site.
California linderiella (Linderiella occidentalis)	FSC/	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools typically has very low alkalinity, conductivity, and total dissolved solids.	Unlikely. Suitable habitat not found at the project site.
California tiger salamander (Ambystoma californiense)	FT/ST	Grasslands and oak woodlands near seasonal pools and stock ponds in central and coastal California. Needs upland habitat to aestivate (remain dormant during dry months) in small mammal burrows, cracks in the soil, or moist leaf litter. Requires seasonal water sources that persist into late March for breeding habitat.	Unlikely. Suitable habitat not found at the project site.
Coast horned lizard (Phrynosoma blainvillii)	/SSC	Arid grassland and scrubland habitats; prefers lowlands along sandy washes with scattered low bushes. Requires open areas for sunning, bushes for cover, patches of loose soil for burrowing, and abundant supply of ants and other insects for feeding.	Low Potential. Species known to occur within the vicinity of the project site.
Conservancy fairy shrimp (Branchinecta conservatio)	FE/	Endemic to the grasslands of the northern two-thirds of the central valley; found in large, turbid pools. Also occurs in swales formed by old, braided alluvium filled by winter/spring rains.	Unlikely. Suitable habitat not found at the project site.
Crotch bumble bee (Bombus crotchii)	/SCE	Open grassland and scrub habitats. Require flowering plants and suitable nesting sites. Documented food plants include <i>Asclepias</i> sp., <i>Chaenactis</i> sp., <i>Lupinus</i> sp., <i>Medicago</i> sp., <i>Phacelia</i> sp., and <i>Salvia</i> sp.	Unlikely. Suitable open grassland or scrub habitats not found at the project site.
Giant garter snake (Thamnophis gigas)	FT/ ST	Prefers freshwater marsh and low gradient streams. Adapted to drainage canals and irrigation ditches. The most aquatic garter snake in California.	Unlikely. Suitable habitat not found at the project site.
Hardhead (Mylopharodon conocephalus)	/SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity.	Unlikely. Suitable habitat not found at the project site.
Hoary bat (Lasiurus cinereus)	/SSC	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Low Potential. Species known to occur within the vicinity of the project site.
Least Bell's vireo (Vireo bellii pusillus)	FE/SE	Summer resident of southern and central California in riparian habitats below 2,000 feet in elevation. Often nests in large shrubs, along margins of bushes or on twigs projecting into pathways.	Unlikely. Suitable habitat not found at the project site.

Table 6-2 Special-Status Wildlife Species with Potential to Occur in the Project Vicinity

Species	Status (Federal /State)	Suitable Habitat Description	Potential to Occur on Project Site
Loggerhead shrike (Lanius ludovicianus)	/	(Nesting) Broken woodlands, savannah, pinyon-juniper, Joshua tree and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning and fairly dense shrubs and brush for nesting.	Moderate Potential. Species known to occur within the vicinity of the project site.
Long-horn fairy shrimp (Branchinecta longiantenna)	FE/	Endemic to the eastern margin of the Central Coast mountains in seasonally astatic grassland vernal pools. Inhabits small, clear-water depressions in sandstone and clear to turbid clay/grass-bottomed pools in shallow swales.	Unlikely. Suitable habitat not found at the project site.
Merced kangaroo rat (Dipodomys heermanni dixoni)	FSC/	Grassland and savannah communities in eastern Merced and Stanislaus Counties. Needs fine, deep, well-drained soil for burrowing. Granivorous, but also eats forbs and green grasses.	Unlikely. Suitable habitat not found at the project site.
Midvalley fairy shrimp (Branchinecta mesovallensis)	/	Vernal pools in the Central Valley.	Unlikely. Suitable habitat not found at the project site.
Northern California legless lizard (Anniella pulchra)	/SSC	Sandy or loose loamy soils under sparse vegetation, moist soils. Anniella pulchra is traditionally split into two subspecies: <i>A. pulchra pulchra</i> (silvery legless lizard) and <i>A. pulchra nigra</i> (black legless lizard), but these subspecies are typically no longer recognized.	Low Potential. Species known to occur within the vicinity of the project site.
Obscure bumble bee (Bombus caliginosus)	/SCE	Meadows and grasslands with flowering plants. May be found in some natural areas within urban environments. Require flowering plants that bloom and provide adequate nectar and pollen throughout the colony's flight period from as early as February to late November.	Unlikely. Suitable meadow or grassland habitats with flowering plants not found at the project site.
Pallid bat (Antrozous pallidus)	/SSC	Deserts, grasslands, scrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures.	Moderate Potential. Species known to occur within the vicinity of the project site.
San Joaquin kit fox (Vulpes macrotis mutica)	FE/ST	Annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose- textured sandy soils for burrowing, and suitable prey base.	Low Potential. Species known to occur within twelve miles of the project site.
Steelhead (Oncorhynchus mykiss irideus)	FT/	Coastal stream with clean spawning gravel. Requires cool water and pools. Needs migratory access between natal stream and ocean.	Unlikely. Suitable habitat not found at the project site.
Swainson's hawk (Buteo swainsoni)	/ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas, such as grasslands or agricultural fields supporting rodent populations.	Low Potential. Species known to occur within the vicinity of the project site.
Townsend's big-eared bat (Corynorhinus townsendii)	/SSC	Inhabits a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Moderate Potential. Species known to occur within the vicinity of the project site.
Tricolored blackbird (Agelaius tricolor)	/SE	Areas adjacent to open water with protected nesting substrate, which typically consists of dense, emergent freshwater marsh vegetation.	Unlikely. Suitable habitat not found at the project site.

Species	Status (Federal /State)	Suitable Habitat Description	Potential to Occur on Project Site
Valley elderberry longhorn beetle (Desmocerus californicus dimorphus)	FT/	Elderberry shrubs, usually in Central Valley riparian habitats.	Unlikely. Suitable habitat not found at the project site.
Vernal pool fairy shrimp (Branchinecta lynchi)	FT/	Endemic to the grasslands of the Central Valley, Central Coast Mtns., and South Coast Mtns. in astatic rain-filled pools. Inhabits small, clear-water sandstone depression pools and grass swale, earth slump, or basalt-flow depression pools.	Unlikely. Suitable habitat not found at the project site.
Vernal pool tadpole shrimp (Lepidurus packardi)	FE/	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in swales of unplowed grasslands.	Unlikely. Suitable habitat not found at the project site.
Western pond turtle (Emys marmorata)	/SSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs basking sites (such as rocks or partially submerged logs) and suitable upland habitat for egg-laying (sandy banks or grassy open fields).	Unlikely. Suitable habitat not found at the project site.
Western red bat (Lasiurus blossevillii)	/SSC	Roosts primarily in trees, 2-40 feet above the ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Moderate Potential. Species known to occur within the vicinity of the project site.
Western spadefoot (Spea hammondii)	/SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands, breeds in winter and spring (January - May) in quiet streams and temporary pools.	Unlikely. Suitable habitat not found at the project site.

SOURCE: CDFW 2022

NOTE: Status Codes:

Federal (USFWS)

FE: Listed as Endangered under the Federal Endangered Species Act.

FT: Listed as Threatened under the Federal Endangered Species Act.

FC: A Candidate for listing as Threatened or Endangered under the Federal Endangered Species Act.

FSC: Species of Special Concern.

FD: Delisted under the Federal Endangered Species Act.

State (CDFW)

SE: Listed as Endangered under the California Endangered Species Act.

ST: Listed as Threatened under the California Endangered Species Act.

SR: Listed as Rare under the California Endangered Species Act.

SC: A Candidate for listing as Threatened or Endangered under the California Endangered Species Act.

SSC: Species of Special Concern.

SFP: Fully Protected species under the California Fish and Game Code.

SD: Delisted under the California Endangered Species Act.

6.2 Regulatory Setting

This section briefly describes federal, state, and local regulations, permits, and policies pertaining to biological resources and wetlands as they apply to the project site.

Federal Plans and Regulations Endangered Species Act

The federal Endangered Species Act of 1973 (known hereafter as the "Act") protects species that the USFWS has listed as "Endangered" or "Threatened." Permits may be required from USFWS if activities associated with a proposed project would result in the "take" of a federally listed species or its habitat. Under the Act, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in "take." "Take" of a listed species is prohibited unless (1) a Section 10(a) permit has been issued by the USFWS or (2) an Incidental Take Statement has been obtained through formal consultation between a federal agency and the USFWS pursuant to Section 7 of the Act.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act of 1989 prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This Act encompasses whole birds, parts of birds, bird nests, and eggs of over 800 native birds, including many common species.

Clean Water Act

Section 404 of the Clean Water Act of 1972 regulates the discharge of dredge and fill material into "Waters of the U.S." including wetlands. Certain natural drainage channels and wetlands are considered jurisdictional "Waters of the U.S." The U.S. Army Corps of Engineers (USACE) is responsible for administering the Section 404 permit program. The agency determines the extent of its jurisdiction as defined by ordinary high-water marks on channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions naturally select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual and the 2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.

Activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Discharge permits are typically issued on the condition that the project proponent agrees to provide compensatory mitigation which results in no net loss of wetland area, function, or value, either through wetland creation, restoration, or the purchase of wetland credits through an approved wetland mitigation bank. In addition to individual project discharge permits, the USACE also issues general nationwide permits applicable for certain activities.

State Plans and Regulations California Endangered Species Act

Pursuant to the California Endangered Species Act and Section 2081 of the California Fish and Game Code, an Incidental Take Permit from the CDFW is required for projects that could result in the "take" of a state-listed Threatened or Endangered species. "Take" is defined under these laws as an activity that would directly or indirectly kill an individual of a species. If a project would result in the "take" of a state-listed species, then a CDFW Incidental Take Permit, including the preparation of a conservation plan, would be required.

Nesting Birds and Birds of Prey

Sections 3505, 3503.5, and 3800 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, including their nests or eggs. Birds of prey (the orders Falconiformes and Strigiformes) are specifically protected in California under provisions of the California Fish and Game Code, Section 3503.5. This section of the Code establishes that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code. Disturbance that causes nest abandonment and/or loss of reproductive effort, such as construction during the breeding season, is considered take by the CDFW.

Streambed Alterations

The CDFW has jurisdiction over the bed and bank of natural drainages according to provisions of Sections 1601 through 1603 of the California Fish and Game Code. Diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that support wildlife resources and/or riparian vegetation are subject to CDFW regulations. Activities that would disturb these drainages are regulated by the CDFW; authorization is required in the form of a Streambed Alteration Agreement. Such an agreement typically stipulates measures that will protect the habitat values of the drainage in question.

California Porter-Cologne Water Quality Control Act

Under the California Porter-Cologne Water Quality Control Act, the applicable Regional Water Quality Control Board (regional board) may necessitate Waste Discharge Requirements for the fill or alteration of "Waters of the State," which according to California Water Code Section 13050 includes "any surface water or groundwater, including saline waters, within the boundaries of the state." The regional board may, therefore, necessitate Waste Discharge Requirements even if the affected waters are not under USACE jurisdiction. Also, under Section 401 of the Clean Water Act, any activity requiring a USACE Section 404 permit must also obtain a state Water Quality Certification (or waiver thereof) to ensure that the proposed activity will meet state water quality standards. The applicable state regional board is responsible for administering the water quality certification program and enforcing National Pollutant Discharge Elimination System permits.

Local Plans and Regulations Merced County General Plan

The Natural Resources Element of the 2030 Merced County General Plan contains the following policies associated with biological resources that are applicable to the proposed project:

Policy NR-1.1 - Habitat Protection. Identify areas that have significant long-term habitat and wetland values including riparian corridors, wetlands, grasslands, rivers and waterways, oak woodlands, vernal pools, and wildlife movement and migration corridors, and provide information to landowners.

Policy NR-1.5 - Wetland and Riparian Habitat Buffer. Identify wetlands and riparian habitat areas and designate a buffer zone around each area sufficient to protect them from degradation, encroachment, or loss.

Policy NR-1.6 - Terrestrial Wildlife Mobility. Encourage property owners within or adjacent to designated habitat connectivity corridors that have been mapped or otherwise identified by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service to manage their lands in accordance with such mapping programs. In the planning and development of public works projects that could physically interfere with wildlife mobility, the County shall consult with the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service to determine the potential for such effects and implement any feasible mitigation measures.

Policy NR-1.8 - Use of Native Plant Species for Landscaping. Encourage the use of native plant species in landscaping, and, where the County has discretion, require the use of native plant species for landscaping.

Policy NR-1.12 - Wetland Avoidance. Avoid or minimize loss of existing wetland resources by careful placement and construction of any necessary new public utilities and facilities, including roads, railroads, high speed rail, sewage disposal ponds, gas lines, electrical lines, and water/wastewater systems.

Policy NR-1.13 - Wetland Setbacks. Require an appropriate setback, to be determined during the development review process, for developed and agricultural uses from the delineated edges of wetlands.

Policy NR-1.15 - Urban Forest Protection and Expansion. Protect existing trees and encourage the planting of new trees in existing communities. Adopt an Oak Woodland Ordinance that requires trees larger than a specified diameter that are removed to accommodate development be replaced at a set ratio. Policy NR-1.17 - Agency Coordination. Consult with private, local, State, and Federal agencies to assist in the protection of biological resources and prevention of degradation, encroachment, or loss of resources managed by these agencies.

Policy NR-1.21 - Special Status Species Surveys and Mitigation. Incorporate the survey standards and mitigation requirements of state and federal resource management agencies for use in the County's review processes for both private and public projects.

Delhi Community Plan

The community plan provides direction regarding the conservation of biological resources. The community plan recognizes that the following special-status-species habitats or potential habitat may be present in the community plan area and includes the following related policies and implementation actions:

- Swainson's Hawk;
- Burrowing Owl;
- California Horned Lizard;
- California Legless Lizard; and
- Loggerhead Shrike.

Policy: OS 4.1 - Survey and identify potential special status species habitat prior to development activity.

Implementation Measure: OS 4.1.a - Any project that is within master plan area or is more than one (1) acre in size, the applicant shall submit a pre-construction survey on all lands proposed for clearing or development for Swainson's hawk nests, burrowing owl habitat, California horned lizard habitat, California legless lizard habitat, and for loggerhead shrike nesting habitat or provide documentation of compliance from the California Department of Fish and Wildlife Service.

Delhi Community Plan EIR

The community plan EIR identifies potential impacts to special-status species and nesting birds. Mitigation measures are provided for Swainson's hawk, burrowing owl, California horned lizard, Northern California legless lizard, and nesting birds.

6.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of GHGs, as it does on a whole series of additional environmental topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of GHG impacts, or on any subject addressed in the checklist. Rather,

with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The County has done so here. Therefore, for purposes of this SEIR, a significant impact would occur if implementation of the proposed project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

Issues not Discussed Further in this Section Sensitive Natural Communities

There were no sensitive natural communities found within the site during the 2022 survey. No further discussion of this issue is necessary.

Regulated Trees

There are no policies in the general plan or community plan, or regulations in the Merced County Code that pertain to the damage to or loss of trees at the site. Therefore, no further discussion of conflicts with tree protection guidance is necessary.

Habitat Conservation Plans

No adopted habitat conservation plans exist in the project vicinity. No further discussion of this issue is necessary.

The applicable issues for the proposed project are evaluated in the impact analysis below.

6.4 Analysis, Impacts, and Mitigation Measures

This evaluation is based a review of existing scientific literature, aerial photographs, technical background information; relevant documents addressing biological resources at the project site; a site survey conducted by EMC Planning Group; and policies applicable to projects planned in Delhi and Merced County.

Effects on Special-Status Plant and Wildlife Species

IMPACT 6-1	Potential Adverse Effect on Special-Status Plant Species	No Impact	
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No suitable habitat for special-status plant species recorded as occurring in the vicinity of the project site was found at the project site or the off-site improvement areas. Many of the special-status plant species in the vicinity are adapted to special conditions not found on the project site, including alkaline soils and vernal pools. Therefore, the proposed project would have no impact on special-status plant spatus plant species.

IMPACT 6-2	Potential Adverse Effect on Special-Status Wildlife Species (American Badger)	Less than Significant with Mitigation	
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American badger is a California Species of Special Concern. It is an uncommon, permanent resident found throughout most of the state, except in the northern North Coast area. Typical habitats include drier open stages of most shrub, forest, and herbaceous habitats with friable soils suitable for burrows. Prey species include fossorial rodents such as rats, mice, chipmunks, ground squirrels, and pocket gophers. Badger diet shifts seasonally depending on the availability of prey and may also include reptiles, insects, earthworms, eggs, birds, and carrion. Mixed oak woodland, coastal scrub, and grassland habitats provide cover, drier soils for burrowing, and prey resources for this species. There are two CNDDB occurrences recorded within twelve miles of the project site (Occurrence nos. 67 and 294, CDFW 2022). The ruderal/agricultural habitat on the project site could provide marginal habitat for the American badger.

Conclusion

American badgers are known to occur in the region and could den and forage on the project site or within off-site improvement areas. Development could result in impacts to this species from direct mortality or injury during construction. Loss or harm to American badger is considered a significant adverse impact. There were no mitigation measures included in the community plan EIR for potential impacts to American badger, however implementation of Mitigation Measure 6-2 would reduce potentially significant impacts to American badger to a less than-significant-level.

Mitigation Measures

6-2a Prior to ground disturbing activities for future individual projects within the project site or the off-site improvement areas, a qualified biologist shall conduct a training session for all construction personnel. At a minimum, the training shall include a description of special-status species potentially occurring in the project vicinity, including, but not limited to, American badger, San Joaquin kit fox, coast horned lizard, Northern California legless lizard, burrowing owl, and nesting birds and raptors. Their habitats, general measures that are being implemented to conserve species as they relate to the project, and the boundaries within which construction activities will occur will be explained. Informational handouts with photographs clearly illustrating the species' appearances shall be used in the training session. All new construction personnel shall undergo this mandatory environmental awareness training.

> The qualified biologist will train biological monitors selected from the construction crew by the construction contractor (typically the project foreman). Before the start of work each day, the monitor will check for animals under any equipment such as vehicles and stored pipes within active construction zones. The monitor will also check all excavated steep-walled holes or trenches greater than one foot deep for trapped animals. If a special-status species is observed within an active construction zone, the qualified biologist will be notified immediately and all work within 50 feet of the individual will be halted and all equipment turned off until the individual has left the construction area.

> Individual project developers shall submit evidence of completion of this training to the Merced County Community and Economic Development Department prior to initiation of ground disturbing activities.

6-2b Not more than 14 days prior to the commencement of ground-disturbing activities, a qualified wildlife biologist shall conduct surveys of the grassland habitat on the project site or the off-site improvement areas to identify any potential American badger burrows/dens. If the survey results are negative (i.e., no badger dens observed), a letter report confirming absence will be prepared and submitted to the Merced County Community and Economic Development Department and no further mitigation is required.

If the results are positive (badger dens are observed), the qualified biologist shall determine if the dens are active by installing a game camera for 3 days and 3 nights to determine if the den is in use.

a) If the biologist determines that a den may be active, coordination with the CDFW shall be undertaken to develop a suitable strategy to avoid impacts to American badger. The strategy may include the following: the biologist shall install a one-way

door in the den opening and continue use of the game camera. Once the camera captures the individual exiting the one-way door, the den can be excavated with hand tools to prevent badgers from reusing them. If the biologist determines that the den is a maternity den, construction activities shall be delayed during the maternity season (February to August), or until the badgers leave the den on their own accord or the biologist determines that the den is no longer in use.

b) If the game camera does not capture an individual entering/exiting the den, the den can be excavated with hand tools to prevent badgers from reusing them.

After dens have been excavated and the absence of American badger confirmed, a letter report will be prepared and submitted to the Merced County Community and Economic Development Department.

The likelihood of this species occurring on the project site is considered low. Implementation of this mitigation measure would reduce the potential significant impact to American badger to a less-than-significant level by requiring pre-construction surveys and incorporation of appropriate avoidance and minimization measures should evidence of American badger be found on the project site. Therefore, this impact is less-than-significant with mitigation incorporated.

IMPACT	Potential Adverse Effect on Special-Status Wildlife Species	Less than Significant
6-3	(San Joaquin Kit Fox)	with Mitigation

The San Joaquin kit fox is a federally-listed endangered species and a state-listed threatened species. The present range of the San Joaquin kit fox extends from the southern end of the San Joaquin Valley, north to Tulare County, and along the interior Coast Range valleys and foothills to central Contra Costa County. San Joaquin kit foxes typically inhabit annual grasslands or grassy open spaces with scattered shrubby vegetation but can also be found in some agricultural habitats and urban areas. This species needs loose-textured sandy soils for burrowing, and they also need areas that provide a suitable prey base, including black-tailed hare, desert cottontails, and California ground squirrels, as well as birds, reptiles, and carrion.

According to the CDFW, kit foxes have become established in the urban settings of Bakersfield, Taft, and Coalinga (Harrison et. al 2011). When kit foxes have easy access to trash and pet food, they often lose fear of people and urban environments. There are three CNDDB occurrences recorded within twelve miles of the project site, including within the urban area of Atwater (Occurrence nos. 23, 600, and 601, CNDDB 2022).

Conclusion

The likelihood of this species occurring on the project site or the off-site improvement areas is considered low. Loss of or harm to individual kit foxes could result if they are present or seek shelter during construction within artificial structures, such as stored pipes or exposed trenches.

Loss or harm to San Joaquin kit fox is considered a significant adverse impact. There were no mitigation measures included in the community plan EIR for potential impacts to San Joaquin kit fox. However, implementation of mitigation measures 6-2a, which requires a training session on special-status species potentially present on the construction site for all personnel, and 6-3 would reduce this potential, significant impact to San Joaquin kit fox to a less-than-significant level.

Mitigation Measure

6-3 The U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011) shall be implemented prior to initiation of and during any construction activity on the project site or the off-site improvement areas to avoid unintended take of individual San Joaquin kit foxes.

> Preconstruction/pre-activity surveys for San Joaquin kit fox shall be conducted no less than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity that may impact San Joaquin kit fox. The surveys shall include all work areas and a minimum 200-foot buffer of the project site or off-site improvement areas. The preconstruction surveys shall identify kit fox habitat features on the project site, evaluate use by kit fox and, if possible, assess the potential impacts of the proposed activity. The status of all dens shall be determined and mapped.

> If a natal/pupping den is discovered within the project area or within 200 feet of the project boundary or off-site improvement areas, the applicant shall consult with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service to establish an appropriate avoidance buffer. The avoidance buffer shall be maintained until such time as the burrow is no longer active and/or an incidental take permit is determined to be required and is obtained.

In addition, the following measures shall be observed:

- a. Project-related vehicles shall observe a 20-mph speed limit in all project areas; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction shall be minimized. Off-road traffic outside of designated project area shall be prohibited.
- b. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 11 of the Construction and Operational Requirements in the Standardized Recommendations must be followed.

- c. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.
- d. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site.
- e. No firearms shall be allowed on the project site during construction activities.
- f. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on site during construction activities.
- g. Use of rodenticides and herbicides on the project site during construction shall be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service. If rodent control must be conducted, zinc phosphide shall be used because of proven lower risk to kit fox.
- h. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape.
- i. Any contractor, employee, or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to the Merced County Community and Economic Development Department, who will contact the CDFW and USFWS as needed.

Implementation of this mitigation measure would reduce the potential significant impact to San Joaquin kit fox to a less-than-significant level by requiring pre-construction surveys and incorporation of appropriate avoidance and minimization measures should evidence of San Joaquin kit fox be found on the project site. Therefore, this impact is less-than-significant with mitigation incorporated.

Cavities in mature, hollow trees and some developed structures on the project site provide potential roosting habitat for four special-status bat species, all California Species of Special Concern: hoary bat (*Lasiurus cinereus*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and Townsend's big-eared bat (*Corynorhinus townsendii*). All four species are known to occur in the project region.

Conclusion

Potential habitat for special-status bat species occurs in mature, hollow trees and around residences and other structures present within the project site. If special-status bats are present on the site or off-site improvement areas, tree removal, building demolition, and other construction activities could result in the loss of individual animals. This would be a significant adverse environmental impact. There were no mitigation measures included in the community plan EIR for potential impacts to special-status bat species. However, implementation of mitigation measures 6-2a, which requires a training session on special-status species potentially present on the construction site for all personnel, and 6-4 would reduce this potential, significant impact to special-status bats to a lessthan-significant level.

Mitigation Measure

6-4 Approximately 15 days prior to tree removal, building demolition, or other construction activities, developers of individual projects within the project site or off-site improvement areas shall retain a qualified biologist to conduct a habitat assessment for bats and potential roosting sites in buildings and trees to be removed, in buildings and trees within 50 feet of the development footprint, and surrounding structures situated within 50 feet of disturbance activities by the project. Bats potentially roosting on the exteriors of buildings on the project site may be disturbed by construction activities. Bats that roost in buildings are usually in structural voids, the spaces between the exterior and interior envelopes of a building. Bats enter voids through openings on the exterior of buildings. A colony may remain unnoticed unless someone sees, hears, or smells them.

In the event that construction activities are suspended for 15 consecutive days or longer, including the time period between development activities at each respective lot or parcel, these surveys shall be repeated. These surveys shall include a visual inspection of potential roosting features (bats need not be present) and a search for presence of guano within the project site, construction access routes, and 50 feet around these areas. Cavities, crevices, exfoliating bark, and bark fissures that could provide suitable potential nest or roost habitat for bats shall be surveyed. Assumptions can be made on what species is present due to observed visual characteristics along with habitat use, or the

bats can be identified to the species level with the use of a bat echolocation detector such as an "Anabat" unit. Potential roosting features found during the survey shall be flagged or marked. Locations off the site to which access is not available may be surveyed from within the site or from public areas.

If no roosting sites or bats are found, a letter report confirming absence shall be submitted by the biologist to the Merced County Community and Economic Development Department and no further mitigation is required.

If bats or roosting sites are found, a letter report and supplemental documents shall be provided by the biologist to the Merced County Community and Economic Development Department prior to ground disturbance activities and the following monitoring, exclusion, and habitat replacement measures shall be implemented:

- a. If bats are found roosting outside of the nursery season (May 1 through October 1), they shall be evicted as described under (b) below. If bats are found roosting during the nursery season, they shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of the roost bat pups, if possible, or by monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is determined to not be a maternal roost, then the bats shall be evicted as described under (b) below. Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost cannot occur during the nursery season. Therefore, if a maternal roost is present, a 50-foot buffer zone (or different size if determined in consultation with the California Department of Fish and Wildlife) shall be established around the roosting site within which no construction activities including tree removal or structure disturbance shall occur until after the nursery season.
- If a non-breeding bat hibernaculum is found in a tree or snag scheduled for b. removal or on any structures within 50 feet of project disturbance activities, the individuals shall be safely evicted, under the direction of a qualified bat biologist. If pre-construction surveys determine that there are bats present in any trees or structures to be removed, exclusion structures (e.g., one-way doors or similar methods) shall be installed by a qualified biologist. The exclusion structures shall not be placed until the time of year in which young are able to fly, outside of the nursery season. Information on placement of exclusion structures shall be provided to the CDFW prior to construction. If needed, other removal methods could include: carefully opening the roosting area in a tree or snag by hand to expose the cavity and opening doors/windows on structures, or creating openings in walls to allow light into the structures. Removal of any trees or snags and disturbance within 50 feet of any structures shall be conducted no earlier than the following day (i.e., at least one night shall be provided between initial roost eviction disturbance and tree removal/disturbance activities). This action will allow bats to leave during dark hours, which increases their chance of finding new roosts with a minimum of potential predation.

Individual project developers shall be responsible for implementation of this mitigation measure with oversight by Merced County. Compliance with this measure shall be documented and submitted to the Merced County Community and Economic Development Department.

Implementation of this mitigation measure would reduce the potential significant impact to special-status bats to a less-than-significant level by requiring pre-construction surveys and incorporation of appropriate avoidance and minimization measures should evidence of roosting bats be found on the project site. Therefore, this impact is less-than-significant with mitigation incorporated.

IMPACT	Potential Adverse Effect on Special-Status Wildlife Species	Less than Significant
6-5	(Coast Horned Lizard and Northern California Legless Lizard)	with Mitigation

Coast Horned Lizard. The state Species of Special Concern coast horned lizard occurs in a wide range of habitats, though it is most common in lowlands along sandy washes with scattered low bushes. It requires open areas for basking, fine loose soil where it can bury itself for camouflage to escape predators and regulate its temperature, shrubs for refugia, and abundant insect prey, especially ants; coast horned lizards are ant specialists, and depend on the presence of native ant species (Stebbins 2018).

Northern California Legless Lizard. The state Species of Special Concern Northern California legless lizard inhabits sandy or loose loamy soils under sparse vegetation and prefers moist soils. This fossorial (burrowing) species forages on invertebrates beneath the leaf litter or duff layer at the base of bushes and trees or under wood, rocks, and slash in appropriate habitats (Stebbins 2003).

Conclusion

Both coast horned lizard and Northern California legless lizard have the potential to occur in the sandy soils found at the project site or off-site improvement areas. If these species are present in impact areas, project development could result in the direct loss of individuals. Community plan EIR mitigation measure 5-4 requires preconstruction surveys for coast horned lizard and northern California legless lizard and measures to protect or mitigate for impacts if found. The following mitigation measure supplements the community plan EIR measure with the addition of mitigation measure 6-2a, which requires a training session on special-status species potentially present on the construction site for all personnel, would ensure that this potentially significant impact is reduced to less than significant.

Mitigation Measure

6-5 Individual project developers will retain a biologist qualified in herpetology to conduct preconstruction surveys for coast horned lizard and Northern California legless lizard.
 Preconstruction surveys will be conducted within impact areas at the project site or off-

site improvement areas no more than 48 hours prior to disturbance of any suitable habitat for these species as determined by the qualified biologist. Surveys will utilize hand search methods within impact areas where these species are expected to be found (i.e., under shrubs, other vegetation, or debris on sandy soils). Any individuals located during the surveys will be safely relocated to suitable habitat outside of the impact areas.

In coordination with the CDFW, as needed, the qualified biologist will be at the project site to recover any coast horned lizards or Northern California legless lizards that may be excavated/unearthed during initial ground disturbance and vegetation removal activities. If the animals are in good health, they will be immediately relocated to a designated release site outside of the work area. If they are injured, the animals will be released to a CDFW-approved rehabilitation specialist until they are in a condition to be released into the designated release site.

Implementation of this mitigation measure would reduce the potential significant impact to coast horned lizard and Northern California legless lizard to a less-than-significant level by requiring pre-construction surveys for coast horned lizard and Northern California legless lizard on or near the project site and incorporation of appropriate avoidance and minimization measures should evidence of these special-status reptiles be found on the project site. Therefore, this impact is less-than-significant with mitigation incorporated.

IMPACT	Potential Adverse Effect on Special-Status Wildlife Species	Less than Significant	
6-6	(Burrowing Owl)	with Mitigation	1

Burrowing owl is a California Species of Special Concern. Burrowing owls live and breed in burrows in the ground, especially in abandoned California ground squirrel burrows. Optimal habitat conditions include large open, dry and nearly level grasslands or prairies with short to moderate vegetation height and cover, areas of bare ground, and populations of burrowing mammals. This species is known to occur in the project vicinity. The ruderal and agricultural habitat within the site provides marginally suitable foraging habitat for burrowing owl, and a few scattered small mammal burrows on the site could be utilized for nesting habitat, but burrowing owl has low potential to occur on the site.

Conclusion

If burrowing owl is present on or adjacent to the project site or off-site improvement areas, construction activities could result in the loss or disturbance of individual animals. This would be a significant adverse environmental impact. Community plan EIR mitigation measure 5-3 requires preconstruction surveys for burrowing owl and measures to protect or mitigate for impacts if found. The following mitigation measure supplements the community plan EIR measure with the addition of mitigation measure 6-2a, which requires a training session on special-status species potentially present on the construction site for all personnel, would ensure that this potentially significant impact is reduced to less than significant.

Mitigation Measure

6-6 To avoid/minimize impacts to burrowing owls potentially occurring within the project site or off-site improvement areas, individual project developers shall retain a biologist qualified in ornithology to conduct surveys for burrowing owl. The approved biologist shall conduct a two-visit (i.e., morning and evening) presence/absence survey at areas of suitable habitat on and adjacent to the project site boundary no less than 14 days prior to the start of construction or ground disturbance activities. Surveys shall be conducted according to the methods for take avoidance described in the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) and the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If no burrowing owls are found, a letter report confirming absence will be prepared and submitted to the Merced County Community and Economic Development Department and no further mitigation is required.

Because burrowing owls occupy habitat year-round, seasonal no-disturbance buffers, as outlined in the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993) and the Staff Report on Burrowing Owl Mitigation (CDFW 2012), shall be in place around occupied habitat prior to and during any ground disturbance activities. The following table includes buffer areas based on the time of year and level of disturbance (CDFW 2012), unless a qualified biologist approved by the CDFW verifies through non-invasive measures that either: 1) birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance Buffers (meters)		
		Low	Med	High
Nesting Sites	April 1 – Aug 15	200 m	500 m	500 m
Nesting Sites	Aug 16 – Oct 15	200 m	200 m	500 m
Nesting Sites	Oct 16 – Mar 31	50 m	100 m	500 m

If burrowing owl is found and avoidance is not possible, burrow exclusion may be conducted by qualified biologists only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. Occupied burrows shall be replaced with artificial burrows at a ratio of one collapsed burrow to one constructed artificial burrow (1:1). Evicted burrowing owls may attempt to colonize or re-colonize an area that would be impacted, thus ongoing surveillance during project activities shall be conducted at a rate sufficient to detect burrowing owls if they return. If surveys locate occupied burrows in or near construction areas, consultation with the CDFW shall occur to interpret survey results and develop a project-specific avoidance and minimization approach. Once the absence of burrowing owl has been confirmed, a letter report will be prepared and submitted to the Merced County Community and Economic Development Department.

Implementation of this mitigation measure would reduce the potential significant impact to burrowing owl to a less-than-significant level by requiring pre-construction surveys for burrowing owl on or near the project site and incorporation of appropriate avoidance and minimization measures should evidence of burrowing owl be found on the project site. Therefore, this impact is less-than-significant with mitigation incorporated.

IMPACT	Potential Adverse Effect on Special-Status Wildlife Species	Less than Significant
6-7	(Swainson's Hawk)	with Mitigation

Swainson's hawk is listed as a threatened species under the California Endangered Species Act. Swainson's hawk is a long-distance migrator. Their nesting grounds occur in northwestern Canada, the western U.S., and Mexico and most populations migrate to wintering grounds in the open pampas and agricultural areas of South America (Argentina, Uruguay, southern Brazil). This roundtrip journey may exceed 14,000 miles. The birds return to the nesting grounds and establish nesting territories in early March.

Swainson's hawk nests in the Central Valley of California are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. These open fields and pastures are their primary foraging areas. Suitable foraging habitat for Swainson's hawk is found in the open agricultural fields at the project site and potential nesting habitat can be found in the many mature trees found on the project site. Two observations of this species have been recorded within five miles of the project site (CNDDB 2022).

Conclusion

Construction activities at the project site or off-site improvement areas could result in the disturbance of nesting sites occupied by Swainson's hawk on or adjacent to the project site, if present. The change in land use from agricultural to developed uses at the site would cause a loss of Swainson's hawk foraging habitat at the project site. Loss or harm to Swainson's hawk or its foraging habitat is considered a significant adverse impact. The California Department of Fish and Game's (now California Department of Fish and Wildlife) *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) provides guidance on how impacts on Swainson's hawk are to be mitigated.

Community plan EIR mitigation measure 5-2 requires preconstruction surveys for Swainson's hawk and monitoring and mitigation requirements if found within 10 miles. The following mitigation measure supplements the community plan EIR measure with the addition of mitigation measure 6-2a, which requires a training session on special-status species potentially present on the construction site for all personnel, would ensure that this potentially significant impact is reduced to less than significant.

Mitigation Measures

- 6-7a The following measures shall be implemented by individual project developers to avoid loss of or harm to Swainson's hawk and other raptors:
 - a. Tree and vegetation removal shall be completed during the nonbreeding season for raptors (September 16–January 31).
 - b. To avoid, minimize, and mitigate potential impacts on Swainson's hawk and other raptors nesting on or adjacent to the project site or off-site improvement areas, retain a qualified biologist to conduct preconstruction surveys and identify active nests on and within 0.5 mile of the project site for construction activities conducted during the breeding season (February 1–September 15). The surveys shall be conducted before the initiation of ground disturbing activities and no less than 14 days and no more than 30 days before the beginning of construction. Guidelines, provided in *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley* (Swainson's Hawk Technical Advisory Committee 2000) or updated, current guidance, shall be followed for surveys for Swainson's hawk. If no nests are found, a report documenting the results of the survey shall be submitted to the Merced County Community and Economic Development Department and no further mitigation will be required.
 - c. Impacts on nesting Swainson's hawks and other raptors shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with California Department of Fish and Wildlife, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. California Department of Fish and Wildlife guidelines recommend implementation of 0.25- or 0.5-mile-wide buffers for Swainson's hawk nests, but the size of the buffer may be decreased if a qualified biologist, in consultation with California Department of Fish and Wildlife, determine that such an adjustment would not be likely to adversely affect the nest.

The appropriate no-disturbance buffer for other raptor nests (i.e., species other than Swainson's hawk) shall be determined by a qualified biologist based on site-specific conditions, the species of nesting bird, nature of the project activity, visibility of the disturbance from the nest site, and other relevant circumstances.

Monitoring of all active raptor nests by a qualified biologist during construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the nodisturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist.

- 6-7b If the preconstruction surveys, a review of the California Natural Diversity Database, or other survey effort indicate there is an active nest within ten miles of the project site, the following measures shall be implemented to mitigate for the loss of Swainson's hawk foraging habitat:
 - a. Prior to ground-disturbing activities, suitable Swainson's hawk foraging habitat shall be preserved to ensure replacement of foraging habitat lost as a result of the project, as determined by a qualified biologist, in consultation with California Department of Fish and Wildlife.
 - b. The habitat value shall be based on Swainson's hawk nesting distribution and an assessment of habitat quality, availability, and use within Merced County. The mitigation ratio shall be consistent with the guidelines included in the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (CDFG 1994). These guidelines specify that the mitigation ratio shall be 1:1 if there is an active nest within one mile of the project site, 0.75:1 if there is an active nest within five miles but greater than one mile away, and 0.5:1 if there is an active nest within 10 miles but greater than five miles away. If there is an active nest within one mile of the project site, the mitigation ratio can be reduced to 0.5:1 if all of the mitigation land can be actively managed for prey production. Such mitigation shall be accomplished through either the transfer of fee title or perpetual conservation easement. The mitigation land shall be located within the known foraging area within Merced County.

Implementation of these mitigation measures would reduce the potential significant impact to Swainson's hawk to a less-than-significant level by requiring pre-construction surveys for Swainson's hawk nests on or near the project site and foraging habitat mitigation.

IMPACT 6-8	Potential Adverse Effect on Nesting Migratory Birds (Including Loggerhead Shrike) and Raptors	Less than Significant with Mitigation	

Various bird species may nest throughout the project site, including in buildings, on open ground, or in any type of vegetation. Loggerhead shrike may utilize the project site for nesting or foraging and is a California Species of Special Concern. Several avian species were observed at the project site during the reconnaissance field survey, including yellow-billed magpie (a USFWS Bird of Conservation Concern), California scrub-jay, and house finch. Likely nesting activity was also observed during the surveys. Many bird species are migratory and fall under the jurisdiction of the Migratory Bird Treaty Act, protections for birds of prey, and/or are considered Fully Protected Species.

Protected nesting birds, including raptor species, have potential to nest on the ground or in vegetation or trees on or adjacent to the project site boundary during the nesting bird season (February 1 through September 15).

Conclusion

If nesting birds protected by state and federal regulations are present during soil-disturbing or construction activities including vegetation removal and site preparation within the project site boundary or off-site improvement areas, the proposed project may directly result in loss of active nests, or indirectly result in nest abandonment and thereby cause loss of fertile eggs or nestlings. These impacts to nesting birds are considered significant adverse environmental impacts. Community plan EIR mitigation measures 5-1 and 5-5 require timing clearing or development activities outside of the nesting season or conducting preconstruction surveys for nesting birds. The following mitigation measure supplements the community plan EIR measures and would ensure that this potentially significant impact is reduced to less than significant.

Mitigation Measure

- 6-8 To avoid impacts to nesting birds during the nesting season (February 1 through September 15), construction activities within or adjacent to the project site boundary or off-site improvement areas that include any vegetation removal or ground disturbance (such as grading or grubbing) shall be conducted between September 16 and January 31, which is outside of the bird nesting season. If construction activities must commence during the bird nesting season, then a qualified biologist shall conduct a pre-construction survey for nesting birds to ensure that no nests would be disturbed during project construction.
 - a. Two surveys for active nests of such birds shall occur within 10 days prior to start of construction, with the second survey conducted within 48 hours prior to start of construction. Appropriate minimum survey radius surrounding the work area is typically 250 feet for passerines, 500 feet for smaller raptors, and 1,000 feet for larger raptors. Surveys shall be conducted at the appropriate times of day to observe nesting activities. Individual project developers shall submit evidence of completion of the preconstruction survey to the Merced County Community and Economic Development Department prior to initiation of ground disturbing activities.

b. If the qualified biologist documents active nests within individual project site boundaries, an appropriate buffer between each nest and active construction shall be established. The buffer shall be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist shall conduct baseline monitoring of each nest to characterize "normal" bird behavior and establish a buffer distance, which allows the birds to exhibit normal behavior. The qualified biologist shall monitor the nesting birds daily during construction activities and increase the buffer if birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist shall have the authority to cease all construction work in the area until the young have fledged and the nest is no longer active. This measure shall be implemented by the individual project developers prior to initiation of ground disturbing activities.

Individual project developers shall be responsible for implementation of this mitigation measure with oversight by the Merced County. Compliance with this measure shall be documented and submitted to the Merced County Community and Economic Development Department.

Implementation of this mitigation measure would reduce the potential significant impact to nesting migratory birds and raptors to a less-than-significant level by requiring pre-construction surveys on or near the project site and incorporation of appropriate avoidance and minimization measures should evidence of nesting birds and raptors be found on the project site. Therefore, this impact is less-than-significant with mitigation incorporated.

Protected Wetlands



Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils intermittently or permanently saturated by water), and wetland hydrology. Waterways or drainage channels are defined by their ordinary high-water marks on channel banks and their connection to other waterways or aquatic features.

The concrete-lined canal, described in the Wetlands and Waterways section above, and located along the northwest edge of the project site, is operated by the Turlock Irrigation District. The USFWS's National Wetland Inventory classifies this waterway as "Riverine" habitat. However, the waterway is concrete-lined, well maintained, and provides minimum aquatic habitat value for plants and wildlife. The smaller concrete-lined channel in the northwestern portion of the project site, also described in the Wetlands and Waterways section, supplies water to the project site from the larger canal. This channel is managed from a gate at the canal. It does not contain hydrophytic vegetation or hydric soils.

Neither of these features appear to have connectivity to natural streams and are, therefore, not subject to USACE jurisdiction under the Clean Water Act. They would also not be considered jurisdictional by the Central Valley Regional Water Quality Control Board or the California Department of Fish and Wildlife.

Wildlife Movement

IMPACT 6-10Interfere with Movement of Wildlife Species or with Established Wildlife CorridorsLess	Than Significant
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Wildlife movement includes migration (i.e., usually movement one way per season), inter-population movement (i.e., long-term dispersal and genetic flow), and small travel pathways (i.e., daily movement within an animal's territory). The project site is generally located within developed areas or areas in agricultural use with limited access to natural corridors. Movement is likely restricted to that of common wildlife species and these areas do not function as regional wildlife movement corridors or habitat linkages.

It is possible that the proposed project could impede to a limited degree the local movement of common wildlife due to an incremental loss of habitat for common species. However, the impact to animals that may occasionally traverse these areas would be less-than-significant given the amount of similar habitat in the vicinity and region. Therefore, no mitigation measures are necessary.

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7.0 Greenhouse Gas Emissions

This section of the EIR assesses the effects of greenhouse gases (GHG) that would be generated with future development of the project site with land uses included in the proposed project. The topic of GHGs was not a subject of analysis under CEQA when the community plan EIR was certified. This topic is being addressed in this SEIR, as it represents new information that could give rise to new significant impacts of the proposed project that were not addressed in the community plan EIR. The analysis here includes projections of GHG emissions that would be generated by future development and identifies their significance based on a threshold of significance derived based on County-specific data.

Information in this section is derived primarily from the following sources:

- Delhi Community Plan (Merced County 2005);
- Draft Environmental Impact Report for the Delhi Community Plan EIR (Merced County 2005); and
- Merced County General Plan Revised Draft Background Report (Merced County 2012).

7.1 Environmental Setting

This section provides a general overview of climate change science and climate change issues in California.

Climate Change Science

The international scientific community has concluded with a high degree of confidence that human activities are causing an accelerated warming of the atmosphere. The resulting change in climate has serious global implications and consequently, human activities that contribute to climate change may have a potentially significant effect on the environment. In recent years, concern about climate change and its potential impacts has risen dramatically. That concern has translated into a range of international treaties and national and regional agreements aimed at diminishing the rate at which global warming is occurring. Over time, the federal government has been tackling concerns about climate change to varying degrees through a range of initiatives and regulatory actions. Many states and local agencies, private sector interests, and other public and private interests have also taken initiative to combat climate change. At the state level, California has taken a leadership role in tackling climate change, as evidenced by the programs outlined in the Regulatory Setting section below.

Effects of Climate Change Rising Temperatures

The Intergovernmental Panel on Climate Change, which includes more than 1,300 scientists from the United States and other countries, estimated that over the last century, global temperatures have increased by about 3.6 degrees Fahrenheit (°F) (NASA 2019). The Intergovernmental Panel on Climate Change forecasts indicate that global temperatures can be expected to continue to rise between 2.5 and 10°F over the next century.

Cal-Adapt, a climate change projection modeling tool developed by California Energy Commission, includes information on environmental change projections resulting from global warming. The model indicates that temperatures in the Merced area region have historically (1961-1990) averaged about 76°F. Under a high GHG emissions projection scenario, temperatures are projected to rise to an average of 86°F by 2099 (Cal-Adapt 2022). Merced has historically experienced an average of three extreme heat days per year (1961-1990). The model projections fluctuate on an annual basis. Under a high GHG emissions scenario, the number of extreme heat days per year is expected to increase to an average of 54 by 2099.

Reduced Snowpack

The Sierra Nevada snowpack acts as a large natural reservoir that stores water during the winter and releases it into rivers and reservoirs in the spring and summer. It is expected that there will be less snowfall in the Sierra Nevada and that the elevations at which snow falls will rise. Similarly, there will be less snowpack water storage to supply runoff water in the warmer months. It has already been documented that California's snow line is rising. More precipitation is expected to fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack. The Sierra Nevada snowpack provides approximately 80 percent of California's annual water supply. The rapid decrease in snowpack and spring melt poses a threat to groundwater resources in many parts of the state where rivers that recharge groundwater with melt water from the Sierra Nevada will have reduced groundwater recharge potential.

Water Supply

Climate change is expected to increase pressure on and competition for water resources, further exacerbating already stretched water supplies. Decreasing snowpack and spring stream flows and increasing demand for water from a growing population and hotter climate could lead to increasing water shortages. Water supplies are also at risk from rising sea levels. Competition for water between cities, farmers, and the environment is expected to increase.

Anticipated changes to source water conditions including more intense storm events, longer drought periods, reduced snowpack at lower elevations, and earlier spring runoff will likely impact the quality of the source waters. Changes in source water quantity and quality may result in increased treatment needs and increased treatment costs.
Precipitation Levels

Precipitation levels are difficult to predict compared to other indicators of climate change. Annual rain and snowfall patterns vary widely from year to year, especially in California. Generally, higher temperatures increase evaporation and decrease snowfall, resulting in a drier climate. On average, Cal-Adapt projections show little change in total annual precipitation in California. Furthermore, among several models, precipitation projections do not show a consistent trend during the next century. The Mediterranean seasonal precipitation pattern is expected to continue, with most precipitation falling during winter from North Pacific storms. One of the four climate models projects slightly wetter winters, while a second projects slightly drier winters with a 10 to 20 percent decrease in total annual precipitation. However, even modest changes would have a significant impact because California ecosystems are conditioned to historical precipitation levels and water resources are nearly fully utilized.

Merced has historically averaged about 12.6 inches of rainfall per year (1961-1990). Under a high GHG emissions scenario, that number is forecast to increase to about 14.3 inches by the end of the century (Cal-Adapt 2022).

More Frequent and Extreme Storm Events

Extreme weather is expected to become more common throughout California. More extreme storm events are expected to increase water runoff to streams and rivers during the winter months, heightening flood risks. Warmer ocean surface temperatures have caused warmer and wetter conditions in the Sierra Nevada, increasing flood risk. Strong winter storms may produce atmospheric rivers that transport large amounts of water vapor from the Pacific Ocean to the California coast. These often last for days and drop heavy rain or snow. Storms involving such atmospheric rivers occurred during the winter of 2016-2017. As the strength of these storms increases, the risk of flooding increases.

Sea Level Rise

Sea level rise is one of the most significant effects of climate change. Sea level has been rising over the past century, and the rate has increased in recent decades. Globally, sea levels are rising due to two main reasons: thermal expansion of warming ocean water and melting of ice from glaciers and ice sheets. Rising sea levels amplify the threat and magnitude of storm surges in coastal areas. The threat of flooding will continue to increase over time as sea levels rise and the magnitude of storms increase. Rising sea levels will create stress on coastal ecosystems that provide recreation, protection from storms, and habitat for fish and wildlife, including commercially valuable fisheries. Rising sea levels can also introduce new, or exacerbate existing, saltwater intrusion into freshwater resources.

Diminished Air Quality

Climate change is expected to exacerbate air quality problems by increasing the frequency, duration, and intensity of conditions conducive to air pollution formation. Higher temperatures and increased

ultraviolet radiation from climate change are expected to facilitate the chemical formation of more secondary air pollutants from ground-level sources. Conversely, decreased precipitation is expected to reduce the volume of particulates cleansed from the air. Incidents of wildfires are expected to increase due to climate change, further contributing to air quality problems.

Ecosystem Changes

Climate change effects will have broad impacts on local and regional ecosystems, habitats, and wildlife as average temperatures increase, precipitation patterns change, and more extreme weather events occur. Species that cannot rapidly adapt are at risk of extinction. As temperatures increase, California vegetation is expected to change. Desert and grassland vegetation is projected to increase while forest vegetation is projected to generally decline. The natural cycle of plant flowering and pollination, as well as the temperature conditions necessary for a thriving locally adapted agriculture, may also be affected. Perennial crops, such as grapes, may take years to recover. Increased temperatures also provide a foothold for invasive species of weeds, insects, and animals.

Social Vulnerability to Climate Change

The impacts of climate change will not affect people equally. People exposed to the most severe climate-related hazards are often those least able to cope with the associated impacts, due to their limited resources and adaptive capacity. Climate change is expected to have a greater impact on larger populations living in poorer and developing countries with lower incomes that rely on natural resources and agricultural systems that will likely be affected by changing climates.

Certain groups in developed countries like the United States will also experience more impacts from climate change than others. People in rural areas are more likely to be affected by climate change related droughts or severe storms compared to their urban counterparts. However, certain groups living in cities will also be at higher risk than others. Place of residence is another vulnerability indicator, as renters, households without air conditioning, households lacking access to grocery stores, households in treeless areas, and households on impervious land cover are also more vulnerable to climate change impacts.

Merced area residents who are at greatest risk include children, the elderly, those with existing health problems, the socially and/or economically disadvantaged, those who are less mobile, and those who work outdoors. Place of residence is another vulnerability indicator, as renters, households without air conditioning, households lacking access to grocery stores, households in treeless areas, and households on impervious land cover are also more vulnerable to climate change impacts.

Health Effects/Illness

As temperatures rise from global warming, the frequency and severity of heat waves will grow and increase the potential for bad air days, which can lead to increases in illness and death due to dehydration, heart attack, stroke, and respiratory disease. Additionally, dry conditions can lead to a greater number of wildfires producing smoke that puts people with asthma and respiratory conditions at risk of illness or death.

Higher temperatures and the increased frequency of heat waves are expected to significantly increase heat-related illnesses, such as heat exhaustion and heat stroke, while also exacerbating conditions associated with cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. An increase of 10°F in average daily temperature is associated with a 2.3 percent increase in mortality. During heat waves mortality rates can increase to about nine percent. As temperatures in the area increase, vulnerable populations such as children, the elderly, people with existing illnesses, and people who work outdoors will face the greatest risk of heat-related illness.

As climate change affects the temperature, humidity, and rainfall levels across California, some areas could become more suitable habitats for insects (especially mosquitoes), ticks, and mites that may carry diseases. Wetter regions are typically more susceptible to vector-borne diseases, especially human hantavirus cardiopulmonary syndrome, Lyme disease, and West Nile virus.

Greenhouse Gas Types

GHGs are emitted by natural processes and human activities. The human-produced GHGs most responsible for global warming and their relative contribution to it are carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons. The contribution of these GHGs to global warming based on the U.S. inventory of GHGs in 2019 (United States Environmental Protection Agency 2021) is summarized in Table 7-1, GHG Types and Their Contribution to Global Warming.

Greenhouse Gas	Percent of all GHG	Typical Sources
Carbon dioxide	81.6 percent	Combustion of fuels, solid waste, wood
Methane (CH ₄)	10.2 percent	Fuel production/combustion; livestock, decay of organic materials
Nitrous Oxide (N2O)	5.6 percent	Combustion of fuels, solid waste, agricultural/industrial processes
Chlorofluorocarbons (CFCs)	2.6 percent	Industrial processes

 Table 7-1
 GHG Types and Their Contribution to Global Warming

SOURCE: United States Environmental Protection Agency 2021 NOTE: Percentages reflect weighting for global warming potential

Greenhouse Gas Global Warming Potentials

Each type of GHG has a different capacity to trap heat in the atmosphere and each type remains in the atmosphere for a particular length of time. The ability of a GHG to trap heat is measured by an index called the global warming potential expressed as carbon dioxide equivalent. Carbon dioxide is considered the baseline GHG in this index and has a global warming potential of one.

The GHG volume produced by a particular source is often expressed in terms of carbon dioxide equivalent (CO₂e). Carbon dioxide equivalent describes how much global warming a given type of GHG will cause, with the global warming potential of CO₂ as the base reference. Carbon dioxide equivalent is useful because it allows comparisons of the impact from many different GHGs, such as methane, perfluorocarbons, or nitrous oxide. If a project is a source of several types of GHGs, their individual global warming potential can be standardized and expressed in terms of CO₂e. Table 7-2, GHG Global Warming Potentials presents a summary of the global warming potential of various GHGs.

GHG	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide CO ₂	50-200	1
Methane CH ₄	12 (+/- 3)	21
Nitrous Oxide N ₂ O	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC Tetrafluoromethane CF4	50,000	6,500
PFC Hexafluoroethane C ₂ F ₆	10,000	9,200
Sulfur Hexafluoride SF6	3,200	23,900

Table 7-2 GHG Global Warming Potentials

SOURCE: United Nations Framework Convention on Climate Change 2019

Methane has a global warming potential of 21 times that of carbon dioxide, and nitrous oxide has a global warming potential of 310 times that of CO_2 . The families of chlorofluorocarbons, hydrofluorocarbons, and perfluorocarbons have a substantially greater global warming potential than other GHGs, generally ranging from approximately 1,300 to over 10,000 times that of CO_2 . While CO_2 represents the vast majority of the total volume of GHGs released into the atmosphere, the release of even small quantities of other types of GHGs can be significant for their contribution to climate change.

Greenhouse Gas Inventories California GHG Emissions Inventory

California is a substantial contributor of global greenhouse gases. Based on the California Air Resources Board's most recent state GHG inventory, a net of 418.2 million metric tons of carbon dioxide equivalent GHG emissions (CO₂e) were generated in 2019 (California Air Resources Board 2022). In 2019, 41.0 percent of all GHG gases emitted in the state came from the transportation sector. Industrial uses and electric power generation (in state generation and out of state generation for imported electricity) were the second and third largest categories at 24.0 percent and 14.0 percent, respectively. The commercial and residential use sectors combined to generate about 14.0 percent of the 2019 emissions, while the agricultural sector contributed 7.0 percent.

Merced County GHG Emissions Inventory

A GHG emissions inventory was conducted in 2012 as part of the Merced County general plan EIR process. Under the business-as-usual condition, approximately 5,710,000 MT CO₂e of emissions were projected for 2020. Agriculture related source emissions dominated the inventory at about 57 percent, with transportation sources second at about 33 percent. Natural gas and electricity consumption were the next most significant sources at about 2 percent and 1.6 percent, respectively (Merced County 2012).

7.2 Regulatory Setting

State, regional, and local policies and regulations pertaining to climate change are summarized below. The Federal government has also adopted policies and regulations to address climate change. However, because California has been at the forefront of addressing climate change, its suite of policies and regulations is generally more comprehensive and stringent than is the Federal government's. Therefore, this regulatory setting section focuses on California's climate change regulatory framework. This framework provides context for how climate change is being addressed and identifies policy and regulatory actions whose implementation would lessen the contribution of the proposed project to climate change.

State

Overall Statutory Framework

The California Legislature has enacted a series of statutes addressing the need to reduce GHG emissions across the State. These statutes can be categorized into four broad categories: (i) statutes setting numerical statewide targets for GHG reductions, and authorizing California Air Resources Board to enact regulations to achieve such targets; (ii) statutes setting separate targets for increasing the use of renewable energy for the generation of electricity throughout the state; (iii) statutes addressing the carbon intensity of vehicle fuels, which prompted the adoption of regulations by California Air Resources Board; and (iv) statutes intended to facilitate land use planning consistent with statewide climate objectives. The discussion below will address each of these key sets of statutes, as well as California Air Resources Board "Scoping Plans" intended to achieve GHG reductions under the first set of statutes and recent building code requirements intended to reduce energy consumption.

Statutes Setting Statewide GHG Reduction Targets Assembly Bill 32 (Global Warming Solutions Act)

In September 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as Assembly Bill (AB) 32. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources.

Senate Bill 32

Effective January 1, 2017, Senate Bill (SB) 32 added a new section to the Health and Safety Code. It provides that "[i]n adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by [Division 25.5 of the Health and Safety Code], [CARB] shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." In other words, SB 32 requires California, by the year 2030, to reduce its statewide GHG emissions so that they are 40 percent below those that occurred in 1990.

Between AB 32 (2006) and SB 32 (2016), the Legislature has codified some of the ambitious GHG reduction targets included within certain high-profile Executive Orders issued by the last two governors. The 2020 statewide GHG reduction target in AB 32 was consistent with the second of three statewide emissions reduction targets set forth in former Governor Arnold Schwarzenegger's 2005 Executive Order known as S-3-05, which is expressly mentioned in AB 32. That Executive Branch document included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed several state agencies to cooperate in the development of a climate action plan. The Secretary of Cal-EPA leads the Climate Action Team, whose goal is to implement global warming emission reduction programs identified in the Climate Action Plan and to report on the progress made toward meeting the emission reduction targets established in the executive order.

In 2015, former Governor Brown issued another Executive Order, B-30-15, which created a "new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050." SB 32 codified this target.

The Legislature has not yet set a 2050 target in the manner done for 2020 and 2030 through AB 32 and SB 32, though references to a 2050 target can be found in statutes outside the Health and Safety Code. In the 2015 legislative session, the Legislature passed Senate Bill 350 (SB 350), which is discussed in more detail below. This legislation added to the Public Utilities Code language that essentially puts into statute the 2050 GHG reduction target already identified in Executive Order S-3-05, albeit in the limited context of new state policies (i) increasing the overall share of electricity that must be produced through renewable energy sources and (ii) directing certain state agencies to begin planning for the widespread electrification of the California vehicle fleet. Section 740.12(a)(1)(D) of the Public Utilities Code now states that "[t]he Legislature finds and declares [that] ... [r]educing emissions of [GHGs] to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 will require widespread transportation electrification." Furthermore, Section 740.12(b) now states that the California Public Utilities Commission, in consultation with California Air Resources Board and the California Energy Commission, must "direct electrical corporations to file applications for programs and investments to accelerate widespread transportation electrification to reduce dependence on petroleum, meet air quality standards, and reduce emissions of greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050."

In 2018, Governor Brown issued Executive Order B-55-18. This order establishes a statewide goal to achieved carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHGs, including meeting the 80 percent below 1990 levels by 2050 target. The carbon neutrality goal assumes that later than 2045, remaining emissions be offset by equivalent net removals of carbon dioxide from the atmosphere, including through sequestration in forests, soils and other natural landscapes.

Targets for the Use of Renewable Energy for the Generation of Electricity *California Renewables Portfolio Standard*

In September 2002, the Legislature enacted Senate Bill 1078, which established the Renewables Portfolio Standard program, requiring retail sellers of electricity, including electrical corporations, community choice aggregators, and electric service providers, to purchase a specified minimum percentage of electricity generated by eligible renewable energy resources such as wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. The legislation set a target by which 20 percent of the State's electricity would be generated by renewable sources.

In September 2006, the Legislature enacted Senate Bill 107, which modified the Renewables Portfolio Standard to require that at least 20 percent of electricity retail sales be served by renewable energy resources by year 2010. In April 2011, the Legislature enacted Senate Bill X1-2, which set even a more aggressive statutory targets for renewable electricity of 33 percent by 2020. In 2015, the Legislature enacted Senate Bill 350 that increased Renewable Portfolio Standard to require 50 percent of electricity generated to be from renewables by 2030. On September 10, 2018, former Governor Brown signed into law SB 100. SB 100 raises California's Renewable Portfolio Standard requirement to 50 percent renewable resources target by December 31, 2026, and 60 percent target by December 31, 2030.

Actions to Reducing Carbon Intensity of Vehicle Fuels Assembly Bill 1493, Pavley Clean Cars Standards

In July 2002, the Legislature enacted Assembly Bill 1493 ("Pavley Bill"), which directed CARB to develop and adopt regulations that achieve the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks beginning with model year 2009. In September 2004, CARB approved regulations to reduce GHG emissions from new motor vehicles beginning with the 2009 model year. These regulations created what are commonly known as the "Pavley standards." In September 2009, CARB adopted amendments to the Pavley standards to reduce GHG emissions from new motor vehicles through the 2016 model year. These regulations created what are commonly known as the "Pavley II standards."

In January 2012, CARB adopted an Advanced Clean Cars program aimed at reducing both smogcausing pollutants and GHG emissions for vehicles model years 2017-2025. This historic program combined the control of smog-causing (criteria) pollutants and GHG emissions into a single coordinated set of requirements. The regulations focus on substantially increasing the number of plug-in hybrid cars and zero-emission vehicles in the vehicle fleet and on making fuels such as electricity and hydrogen readily available for these vehicle technologies. The components of the Advanced Clean Cars program are the low-emission vehicle regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the zero-emission vehicle regulation, which requires manufacturers to produce an increasing number of pure zero-emission vehicles (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 model years.

It is expected that the Advanced Clean Car regulations will reduce GHG emissions from California passenger vehicles by about 34 percent below 2016 levels by 2025, all while improving fuel efficiency and reducing motorists' costs.

Executive Order S-01-07

This order establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In 2018, CARB passed amendments to the Low Carbon Fuel Standard that set a target to reduce fuel carbon intensity by 20 percent by 2030, compared to a 2010 baseline

Actions for Increasing Electric Vehicle Use Executive Order B-16-12

In March 2012, former Governor Brown issued an Executive Order, B-16-12, which embodied a vision of a future in which zero-emission vehicles will play a big part in helping the state meet its GHG reduction targets. Executive Order B-16-12 directed state government to accelerate the market for in California through fleet replacement and electric vehicle infrastructure. The Executive Order set the following targets:

- By 2015, all major cities in California will have adequate infrastructure and be "zero-emission vehicles ready";
- By 2020, adequate infrastructure to support one million zero-emission vehicles;
- By 2025, 1.5 million zero-emission vehicles on the road in California; and
- By 2050, virtually all personal transportation in the State will be based on zero-emission vehicles, and greenhouse gas emissions from the transportation sector will be reduced by 80 percent below 1990 levels.

In sum, California has set a statutory goal of requiring that, by the year 2030, half of the electricity generated in California should be from renewable sources, with increased generation capacity intended to be sufficient to allow the mass conversion of the statewide vehicle fleet from petroleum-fueled vehicles to electrical vehicles and/or other zero-emission vehicles. The Legislature is thus looking to California drivers to buy electric cars, powered by green energy, to help the State meet its aggressive statutory goal, created by SB 32, of reducing statewide GHG emissions by 2030 to 40 percent below 1990 levels. Another key prong to this strategy is to make petroleum-based fuels less carbon intensive. A number of statutes in recent years have addressed that strategy.

Executive Order B-48-18

In January 2018, former Governor Brown issued Executive Order B-48-18. This executive order T requires that all state entities work with the private sector and all appropriate levels of government to put at least five million zero-emission vehicles on California roads by 2030. It also requires all State entities to work with the private sector and all appropriate levels of government to spur the construction and installation of 200 hydrogen fueling stations and 250,000 zero-emission vehicle chargers, including 10,000 direct current fast chargers, by 2025.

Senate Bill 350

In addition to setting increased renewable energy portfolio targets, this bill indirectly promotes electrification of the transportation fleet by promoting actions to enhance availability of renewable energy as a vehicle transportation energy source.

Cap and Trade Program

On October 20, 2011, in a related action, CARB adopted the final cap-and-trade program for California. The California cap-and-trade program creates a market-based system with an overall emissions limit for affected sectors. The program is intended to regulate more than 85 percent of California's emissions and staggers compliance requirements according to the following schedule: (1) electricity generation and large industrial sources (2012); (2) fuel combustion and transportation (2015). The statewide cap for GHG emissions from major sources commenced in 2013. This cap declines over time, achieving GHG emission reductions throughout the program's duration. The program expanded in 2015 to include fuel distributors (natural gas and propane fuel providers and transportation fuel providers) to address emissions from transportation fuels, and from combustion of other fossil fuels not directly covered at large sources in the program's initial phase.

In early 2017, former Governor Brown signed AB 398, which extended the life of the existing Cap and Trade Program through December 2030.

Statutes Intended to Facilitate Land Use Planning Consistent with Statewide Climate Objectives

California Senate Bill 375 (Sustainable Communities Strategy)

This 2008 legislation built on AB 32 by setting forth a mechanism for coordinating land use and transportation on a regional level for the purpose of reducing GHGs. The focus is to reduce miles traveled by passenger vehicles and light trucks. CARB is required to set GHG reduction targets for each metropolitan region. Each of California's metropolitan planning organizations then prepares a sustainable communities strategy that demonstrates how the region will meet its GHG reduction target through integrated land use, housing, and transportation planning. Once adopted by the metropolitan planning organizations, the sustainable communities strategy is to be incorporated into that region's federally enforceable regional transportation plan. If a metropolitan planning organization is unable to meet the targets through the sustainable communities strategy, then an alternative planning strategy must be developed that demonstrates how targets could be achieved, even if meeting the targets is deemed to be infeasible.

Local agencies that adopt land use, housing, and transportation policies that are consistent with and facilitate implementation of the related GHG reduction strategies in a sustainable communities strategy benefit through potential CEQA streamlining for qualifying projects proposed within their boundaries.

Climate Change Scoping Plans AB 32 Scoping Plan

In December 2008, California Air Resources Board adopted the Climate Change Scoping Plan, which contains the main strategies California planned to implement to achieve reduction of approximately 118 million metric tons (MMT) CO₂e, or approximately 22 percent from the state's

projected 2020 emission level of 545 MMT of CO₂e under a business-as-usual scenario This is a reduction of 47 MMT CO₂e, or almost 10 percent, from 2008 emissions. The Scoping Plan also included CARB recommended GHG reductions for each emissions sector of the state GHG inventory.

2014 Scoping Plan Update

In response to comments on the 2008 Scoping Plan, and AB 32's requirement to update the Scoping Plan every five years, CARB revised and reapproved the Scoping Plan in 2014. The 2014 Scoping Plan contains the main strategies California would implement to achieve a reduction of approximately 16 percent from the state's projected 2020 emission levels. The 2014 Scoping Plan also includes a breakdown of the amount of GHG reductions CARB recommends for each emissions sector of the state's GHG inventory. Several strategies to reduce GHG emissions are included: the Low Carbon Fuel Standard, the Pavley Rule, the Advanced Clean Cars program, the Renewable Portfolio Standard, and the Sustainable Communities Strategy.

2017 Scoping Plan

With the passage of SB 32, the Legislature also passed companion legislation AB 197, which provides additional direction for updating the prior scoping plan. The 2017 Scoping Plan represents a second update to the scoping plan to reflect the 2030 target of reducing statewide GHG emissions by 40 percent below 1990 levels codified by SB 32. The GHG reduction strategies in the 2017 Scoping Plan proposed to implement to meet the target include:

- SB 350 achieve 50 percent Renewables Portfolio Standard (RPS) by 2030 and doubling of energy efficiency savings by 2030;
- Low Carbon Fuel Standard increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020);
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario) maintaining existing GHG standards for light- and heavy-duty vehicles, put 4.2 million zero-emission vehicles on the roads, and increase zero-emission buses, delivery and other trucks;
- Sustainable Freight Action Plan improve freight system efficiency, maximize use of near-zero emission vehicles and equipment powered by renewable energy, and deploy over 100,000 zeroemission trucks and equipment by 2030;
- Short-Lived Climate Pollutant Reduction Strategy reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030 and reduce emissions of black carbon 50 percent below 2013 levels by 2030;
- SB 375 Sustainable Communities Strategies increased stringency of 2035 targets;
- Post-2020 Cap-and-Trade Program declining caps, continued linkage with Québec, and linkage to Ontario, Canada;

- 20 percent reduction in greenhouse gas emissions from the refinery sector; and
- By 2018, develop an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

2022 Scoping Plan

The draft 2022 Scoping Plan Update assesses progress toward the statutory 2030 target identified in SB 32, while laying out a path to achieving carbon neutrality no later than 2045 as identified in Executive Order B-55-18. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

This is the first Scoping Plan that adds carbon neutrality as a science-based guide beyond statutorily established emission reduction targets. Previous plans focused on specific GHG reduction targets for the industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. Carbon neutrality takes it one step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution.

Building Code Requirements Intended to Reduce GHG Emissions California Energy Code

The California Energy Code (California Code of Regulations, Title 24, Part 6), which is incorporated into the California Building Standards Code, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Code is updated every three years by the California Energy Commission as the Building Energy Efficiency Standards (BEES) to allow consideration and possible incorporation of new energy efficiency technologies and construction methods. Although the BEES were not originally intended to reduce GHG emissions, increased energy efficiency results in decreased GHG emissions because energy efficient buildings require less electricity. The California Building Standards Code is enforceable at the project-level. Energy standards have supported California's long-term strategy to meet energy demand, and conserve resources. The Energy Code governs window and door materials, lighting, electrical panels, insulation, faucets and additional building features. The requirements vary between home and business buildings, as well as among climate zones in which they are implemented. The current 2022 Energy Code updates the prior 2019 code by requiring actions/features that continue to support California's gradual transition away from use of fossil fuels, and improve environmental quality.

California Green Building Standards Code

The purpose of the California Green Building Standards Code (California Code of Regulations Title 24, Part 11) ("CALGreen") is to improve public health and safety and to promote the general

welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: 1) planning and design; 2) energy efficiency; 3) water efficiency and conservation; 4) material conservation and resource efficiency; and 5) environmental quality. The code, which requires all new buildings in the state to be more energy efficient and environmentally responsible, was most recently updated in July 2022 with the update to take effect on January 1, 2023.

These comprehensive regulations are intended to achieve major reductions in interior and exterior building energy consumption. CALGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of commercial, residential, and state-owned buildings, as well as schools and hospitals. The current 2019 version of CALGreen includes mandatory standards that address:

- Planning and Design (e.g., stormwater, bicycle facilities, clean air vehicles, EV support infrastructure, light pollution and grading and paving);
- Water Efficiency (metering, conserving fixtures, landscaping, outdoor recycle water supply);
- Materials Conservation and Efficiency (moisture control, construction waste management, soil and debris management, recycling, systems commissioning, etc.); and
- Environmental Quality (fireplaces and woodstoves, ducting, paints, carpets, flooring, interior air quality, noise, ozone and refrigerants, etc.).

CALGreen includes two tiers (Tier I and Tier II) of voluntary standards. Each increases the mandatory performance standards above and provide additional elective measures, with Tier 2 measures being the most expansive.

Regional/Local

San Joaquin Valley Air Pollution Control District

In 2009, the San Joaquin Valley Air Pollution Control District adopted its "Guidance for Valley Land-Use Agencies in Addressing GHG Emissions Impacts for New Projects." That guidance includes four possible options for determining significance of GHG impacts: 1) project is exemption from CEQA; 2) project complies with a plan for reduction or mitigating GHG emissions; 3) project reduces GHG emissions by 29 percent by implementing best management practices (this option applies primarily to GHG sources other than land use projects); or 4) project reduces GHG emissions by 29 percent or more below statewide business as usual conditions by applying project specific mitigation.

Regarding the proposed project, none of these options is applicable: 1) the project is not exempt from CEQA; 2) there is currently no plan for reducing GHG emissions that has been adopted by which the project can be assessed for compliance; and 3) recent CEQA court cases have found that

quantified thresholds of significance which are based on statewide targets for GHG emissions generally are not valid for application to local, proposed land use projects (the San Joaquin Valley Air Pollution Control District derived the referenced 29 percent reduction targets from statewide GHG reduction guidance).

Merced County General Plan

Policy guidance from both the general plan is relevant to the proposed project. Representative general plan policies that would directly or indirectly result in GHG emissions by reducing vehicle trip numbers and/or lengths, or by reducing energy demand include:

Policy AQ-1.1- Energy Consumption Reduction - Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.

Policy AQ-1.2 - Business Energy Reduction Strategies - Encourage all businesses to: replace high mileage fleet vehicles with more efficient and/or alternative fuel vehicles; increase the energy efficiency of facilities; transition toward the use of renewable energy instead of non-renewable energy sources; adopt purchasing practices that promote emissions reductions and reusable materials; and increase recycling.

Policy AQ-1.7 - Heat Island Effect Reduction - Require increased tree canopy and reflective surface materials in order to reduce the heat island effect (i.e., increased temperatures due to heat radiation off paved surfaces and rooftops).

Policy AQ-4.1 - Decrease Vehicle Miles Traveled - Require diverse, higherdensity land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled.

Policy AQ-4.3 - Public Transport Use Incentives - Prepare incentives and programs to encourage use of public transit and decrease vehicle miles traveled.

Policy AQ-4.4 - Transportation Alternatives - Require employers and developers to provide employees and residents with attractive, affordable transportation alternatives, such as transit stops, van pool pick-up and drop-off locations, and biking paths/storage.

Policy AQ-4.6 - Non-Motorized Transportation - Encourage non-motorized transportation corridors within and between communities.

Policy AQ-1.5 - calls for the County to prepare a climate action plan. While the County has initiated this process, it is anticipated that a climate action plan would not be adopted before the proposed project is considered for approval by the County, so would not be available as a basis for evaluating the GHG impacts of the project.

Policy CIR-1.22 - Complete Streets - Require new urban streets within Urban Communities to be designed and constructed to not only accommodate automobile, truck, and bus traffic, but to also serve all users, including pedestrians, bicyclists, and transit passengers of all ages and abilities. Policy CIR-3.2 - Transit Improvements - Continue to support transit efforts by the Merced County Association of Governments, Dial-A-Ride, UC Merced Transit, other public entities, private social service providers, and other various private charter services to improve and expand public transit throughout the County.

Policy CIR-4.2 - Bicycle Lanes and Pedestrian Paths - Require all new or major reconstructed streets within Urban Communities to accommodate travel by pedestrians and bicyclists, except where pedestrians and bicyclists are prohibited by law from using a given facility or where the costs of including bikeways and walkways would be excessively disproportionate to the need or probable use.

Policy CIR-4.6 - Multi-Use Trails - Encourage the development of multi-use corridors (such as hiking, equestrian, and mountain biking) in open space areas, along power line transmission corridors, utility easements, rivers, creeks, abandoned railways, and irrigation canals.

Delhi Community Plan

Because the community plan was adopted prior to analysis of GHG impacts being incorporated into the CEQA process, there are no policies or implementation measures in the community plan that specifically address GHG emissions. However, several policies for other topics would directly or indirectly result in GHG emissions by reducing vehicle trip numbers and/or lengths, or by reducing energy demand. Representative examples are as follows:

Implementation Measure LU 1.1.b - Land designated Medium or High Density Residential should be located near schools, parks, commercial and business centers, and major streets.

Policy LU 2.1 - Provide a mix of commercial and employment generating land use designations with infrastructure and services to meet the present and future needs of Community residents including Neighborhood Commercial, General Commercial, Business Park, Industrial, as well as, providing economic opportunity in Mixed Use designated areas.

Implementation Measure LU 2.1.d - Neighborhood Commercial and Mixed Use land use designations shall support neighborhood retail, restaurants, and services.

Implementation Measure CI 1.1.1 - Neighborhoods should be designed to interconnect with surrounding neighborhoods. This may be accomplished through the use of a grid or modified grid network or the use of interconnected cul-de-sacs. Dead end cul-de-sacs that do not provide for pedestrian movement are strongly discouraged except where necessary to provide for the development of odd shaped parcels.

Implementation Measure CI.1.1.m - A pedestrian connection shall be provided at the end of the cul-de-sac for access to adjoining pathways, open spaces, or streets. In conditions where arterials or major collectors with walls adjoin residential areas, open ended cul-de-sacs shall be used to create wall openings with pathway connections, unless a continuous noise wall is demonstrated to be required based on a noise study. Policy CI 3.1 - Establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the Community.

Implementation Measures CI 3.1.d, CI 3.1.e, CI 3.1.f, and CI 4.1.a – all require that bike paths be integrated into new development, including the project site.

Policy CI 5.1 - Development adjacent to minor and major collectors shall coordinate with Merced County Transit to identify appropriate locations for public transit improvements (i.e., bus pullouts, seating shelters) to encourage public transit use.

Implementation Measure CI 5.1.a - Public transit stops shall be provided throughout Delhi as recommended by the County Transit Authority to ensure residents are within the proximity of a public transit stop.

2022 Regional Transportation Plan and Sustainable Communities Strategy for Merced County

The Regional Transportation Plan and Sustainable Communities Strategy for Merced County (Merced County Association of Governments 2022) (RTP/SCS) contains the County's strategy for ensuring that the County transportation system will continue to operate efficiently in the future with sufficient capacity to meet demand and that mobility options are available. The RTP component of the plan focuses on regional transportation infrastructure needs. The SCS components of the plan address planned growth patterns that have been defined by local cities and the County to help reduce vehicle miles traveled consistent with California Senate Bill 375, the Sustainable Communities and Climate Protection Act, which is intended to reduce transportation related greenhouse gas emissions.

The RTP/SCS identifies a range of transportation infrastructure projects and programs to be implemented over time to support transportation efficiency and accommodate planned growth. Improvement projects and programs range from road capacity improvements to bicycle, transit, rail, and complete streets projects. The RTP/SCS includes one program that affects transportation in Delhi - expanded microtransit service.

7.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of GHGs, as it does on a whole series of additional environmental topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of GHG impacts, or on any subject addressed in the checklist. Rather, with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The County has done so here. Therefore, for purposes of this SEIR, a significant impact would occur if implementation of the proposed project would:

- Generate greenhouse gas 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 greenhouse gases.

Derivation of a Quantified Threshold of Significance

As previously summarized in the Regulatory Setting section above, the San Joaquin Valley Air Pollution Control District has not adopted current, defensible guidance for assessing the impacts of GHG emissions, nor a plan for reducing GHG emissions within its boundary that could be referenced by the County as guidance for use in CEQA documents for which the County is the lead agency. Similarly, the County has not adopted a plan for reducing GHGs. If either agency had a qualified plan for reducing GHG emissions in place pursuant to CEQA Guidelines section 15183.5(b)(1), the analysis of GHG emission impacts of the proposed project could be streamlined pursuant to CEQA Guidelines sections 15064(h)(3) and 15130(d). If a proposed project is consistent with the requirements of an adopted, qualified GHG reduction plan, as described in 15183.5(b)(2), the lead agency may determine that the project GHG impacts are less than significant if the project incorporates the applicable GHG reduction measures in the plan or the measures are otherwise required as mitigation measures. In this case, no further analysis is required.

Because there is no applicable threshold of significance or qualified plan for reducing GHG emissions in place that is applicable to the proposed project, additional analysis is needed to determine the significance of its GHG impacts. The steps in that analysis are to craft a quantified threshold of significance using County-level information, to quantify the estimated GHG emissions that would be generated from future development per the proposed land uses, and then to compare those emissions to the threshold to determine impact significance.

A quantified threshold of significance is presented for use in this SEIR which represents a rate of GHG emissions below which the proposed project GHG emissions could be considered less than significant. A rate of emissions is the ratio of the GHG emissions volume generated by a project or plan in a particular year to the "service population" generated by the project or plan in that same year. Service population is the sum of the number of jobs and the number of residents created by a project. A project that produces a high volume of GHG emissions relative to its service population is considered less GHG efficient than the same project that produces a lower volume of GHG emissions when the service population is held constant. Stated in another way, the rate of emissions for the first project exceeds the rate of emissions.

Rate of emissions thresholds had been commonly used in GHG impact analyses in the recent past. However, the legal defensibility of their use when based on statewide data inputs was challenged as part of a landmark 2018 court case from the California Fourth District Court of Appeal known as the Golden Door Properties, LLC v. County of San Diego/Sierra Club. To ensure that the threshold developed for the proposed project is not inconsistent with the decision in this case, the threshold is derived from County-specific information. Further, the threshold is appropriate for the proposed project because it can be effectively applied to projects with a mix of use types as a means to measure the GHG efficiency of the combined uses.

Merced County GHG Emissions Inventory and Future Emissions Reduction Target

The first step in the threshold-setting process is to identify county-wide emissions and set a target for reducing those emissions. A county-wide GHG emissions inventory was conducted as part of the *Merced County General Plan Revised Draft Background Report* (Merced County 2012). Table 12-7 in that document shows the GHG emissions inventories for the County for 1990 and 2005. All GHG emissions sources in the County were estimated to generate approximately 2.260,000 MT CO₂e in the baseline year of 1990. This volume of emissions must be reduced over time for the County to contribute its fair share of reducing statewide GHG emissions in a manner that supports the state's GHG emissions reduction targets.

As described in the Regulatory Setting section above, per SB 32, the state's 2030 target is to reduce statewide emissions by 40 percent below 1990 levels. It's 2050 target, as embodied in Executive Order S-3-05 is to reduce statewide emissions to 80 percent below 1990 levels. Though the state's GHG inventory includes a variety of GHG emissions sources that do not occur in the county, the County intends to use the state's emissions reduction targets as the basis for determining the extent to which county-wide emissions should be reduced. Since the project buildout is projected for approximately the year 2045, a project-specific threshold of significance would rely on the county-wide emissions volume in that year that is based on the statewide emissions reduction trajectory between the years 2030 and 2050. A 40 percent reduction in emissions over this period, or 10 per cent every five years if a linear reduction trajectory in assumed. Therefore, in year 2045, the countywide emissions volume would need to be 70 percent below 1990 levels. Applying this to the County's 1990 emission volume of 2,260,000 MT CO₂e yields a target volume of 678,000 MT CO₂e for the year 2045.

Countywide Service Population

For purposes of identifying the threshold of significance, the service population would be the sum of projected countywide population and employment in the year 2045. This information can be found in the Merced County 2022 RTP/SCS. Table 5.1 in the document identifies the County's regional growth forecast. In 2045, population is forecast at 359,888 and employment is forecast at 110,530. The service population would, therefore, be 470,418.

2045 Threshold of Significance

The threshold of significance for the year 2045 project buildout would be the 2045 county-wide emissions volume target of 678,000 MT CO₂e divided by the service population of 470,418, or 1.44 MT CO₂e.

7.4 Analysis, Impacts, and Mitigation Measures

This analysis focuses on quantifying project GHG emissions, identifying and quantifying reductions in emissions resulting from features of the project, identifying impact significance based on the thresholds of significance identified above, and identifying mitigation where impacts are found to be significant.

Generation of Greenhouse Gas Emissions

IMPACT
7-1Generate Greenhouse Gas EmissionsLess than Significant
with Mitigation

GHG Emissions Projection

The projected GHG emissions for the project consist of the sum of its annual operational emissions, its amortized annual construction emissions and annual change in carbon sequestration potential. This emissions volume is considered "unmitigated" because as it does not account for potential emissions reductions that can accrue from land use design features of a project, measures proposed by a project applicant, and/or implementing mitigation measures that may be identified to reduce emissions. The CalEEMod model used to estimate emissions does, however, account for emissions reductions that would accrue from a number of state regulatory requirements that are applicable to land use development projects. These requirements are described in the AQ/GHG memo in Appendix B, along with the CalEEMod results.

Annual Unmitigated Operational GHG Emissions

Projected operational GHG emissions at the estimated year 2045 buildout of the project site are identified in Appendix B. The memo also includes detailed information on the methodologies, models used and model inputs, and other assumptions used to calculate projected emissions.

The projected unmitigated mobile, area, energy, waste, and water GHG emissions of 20,399 MT CO₂e per year are summarized in Table 7-3, Annual Unmitigated Operational Greenhouse Gas Emissions.

Note that all values in tables that report emissions volumes are rounded to the nearest metric ton.

Emission Sources	GHG Emissions (MT CO ₂ e)
Mobile	17,787
Area	475
Energy	1,787
Waste	199
Water	151
Total	20,399

Table 7-3 Annual Unmitigated Operational Greenhouse Gas Emissions

SOURCE: EMC Planning Group 2022

Annual Amortized Construction GHG Emissions

Projected GHG emissions from construction activities associated with developing the project site are described in the AQ/GHG memo contained in Appendix B, along with information on data and assumptions used.

Construction emissions are modeled at 8,145 MT CO₂e. These are the emissions largely from construction equipment, vendor and haul truck trips, and worker trips. It is common practice for CEQA impact analysis purposes to amortize the total construction emissions over a 30-year period to derive an annual construction emissions volume. The annual volume is then included in the overall annual project emissions inventory. Annual construction emissions would be approximately 272 MT CO₂e per year.

Change in Sequestration Potential

Additional emissions would result from the loss of carbon sequestration in site soils. Soils are a source of carbon capture that is loss when an undeveloped site is converted to an urban use. Loss of carbon sequestration is estimated at 56 MT CO₂e per year.

Total Annual GHG Emissions

As noted above, projected annual unmitigated project GHG emissions are the sum of the annual operational, amortized construction, and amortized sequestration loss emissions as summarized in Table 7-4, Total Annual Unmitigated GHG Emissions.

Table 7-4Total Annual Unmitigated GHG Emissions

Emissions Source	Annual GHG Emissions (MT CO ₂ e)
Operational	20,399
Amortized Construction	272
Amortized Sequestration	56
Total	20,727

SOURCE: EMC Planning Group 2022

Emission Reductions from Project Design Features/Required Consistency with Community Plan and General Plan Policies and from Applicant-Proposed Measures *Project Design Features/Plan Consistency Reductions*

The proposed project would modify land uses identified in the community plan for the project site. As such, it is a general plan amendment project, not an individual development project. Future individual development applications would be submitted to develop the site with uses consistent with the proposed land use plan. Consequently, detailed information is not available about the characteristics/design features of future individual projects that may have GHG reduction benefits. However, at the current project "plan" level of the development entitlement process, GHG reduction features can be identified based on the proposed project land use design and on plans submitted by the applicant.

Project design features would have GHG reduction benefits by reducing vehicle trip volumes and associated VMT include: 1) an extensive on-site pedestrian network, including combined pedestrian use of the Class I bike pathway; and 2) extending transit service to serve the project site (as described below). Providing bicycle paths is also a beneficial feature that can be demonstrated as part of the proposed project, but must be combined with other bicycle support features whose inclusion in future individual development projects is uncertain at this time.

Incorporating bicycle facilities, pedestrian features and transit improvements into individual new development projects is specified in several community plan policies and implementation measures referenced in the Regulatory Setting section above.

While not illustrated in the proposed project plans at the land use design level, community plan policies and implementation measures also require that future developers consult with Merced County Transit to identify the locations of new bus routes and facilities needed to serve new development projects. The proposed project would generate a substantial increase in population. Combined with the fact that new school facilities would be located within the site, it is assumed that transit demand will be sufficient to warrant expanding one or more bus routes to serve the site, with one or more individual future projects required to install bus transit stop facilities to Merced County Transit standards. Consequently, expanded transit service is also considered to be a project design feature.

While other community plan policies and implementation measures and general plan policies could result in GHG reductions, it is uncertain at the current level of development planning whether or to what extent the policy direction will be translated into physical improvements or actions by future developers that would have GHG reduction benefits. Therefore, to be conservative, only the noted two project design features are assumed.

Applicant-Proposed Measures

The project applicant has proposed that no natural gas be supplied to future residential development projects. This would be accomplished by prohibiting installation of permanent natural gas storage and/or distribution infrastructure to all proposed residential projects. This measure will reduce GHG emissions associated with burning natural gas. This measure provides benefit by contributing to the state's goal of achieving zero net GHG emissions by 2045 by eliminating as source of GHG emissions that would otherwise exist beyond that year.

The second measure is to install electric vehicle support infrastructure consistent with mandatory and Tier 2 voluntary measures contained in the CALGreen code. These measures are designed to make electric vehicle parking and electric vehicle charging easily accessible in single- and multifamily development project and in non-residential projects, including commercial uses. The primary purpose is to support more widespread use of electric vehicles powered by electricity from the state grid that is increasingly being generated by renewable energy sources. To be conservative, the emissions reductions from the electric vehicle support improvements have not been quantified.

Resulting Total Emissions Reduction

CalEEMod includes a range of GHG reduction measure options that can be selected to quantify emissions reductions, including the pedestrian and transit project design measures described above. The CalEEMod measures are based on analyses conducted over time that are consolidated and described in the *Handbook for Analyzing Greenhouse Gas Emissions Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (California Air Pollution Control Officers Association 2021). Table 7-5, Annual Mitigated GHG Emissions with Project Design Features and Applicant-Proposed Measure Reductions, shows the annual GHG volume resulting from these reductions, as well as from eliminating natural gas from the residential components of the proposed project. The table also identifies the change in emissions volume relative to the unmitigated emissions volume shown in Table 7-4. The mitigated project CalEEMod results can be found in the AQ/GHG memo and CalEEMod model results presented in Appendix B.

Project Service Population

The project service population is the sum of the new population and employment it would generate. Both projections are identified in Section 4.0, Project Description, and summarized in Table 7-6, Projected Project Service Population.

Table 7-5Annual Mitigated GHG Emissions with Project Design Features and
Applicant-Proposed Measure Reductions

Emissions Source	Proposed Project with Design Feature/Applicant Reductions (MT CO ₂ e/Year)
Mobile	16,749
Area	9
Energy	440
Solid Waste	199
Water	151
Amortized Construction	272
Amortized Sequestration	56
Total Mitigated Emissions	17,876
Reduction from Unmitigated Emissions ¹	<2,851>

SOURCE: EMC Planning Group 2022 NOTE:

1. Reduction is the total volume from Table 7-4 of 20,727 MT CO₂e minus the mitigated emissions volume with design features (and applicant-proposed elimination of natural gas in residential uses) of 17,876 MT CO₂e

Table 7-6 Projected Service Population

Project Service Population		
Population	4,104	
Employment	534	
Service Population (Population + Employment)	4,638	

SOURCE: EMC Planning Group 2022

Proposed Project GHG Emissions Per Service Population and Project Impact

Table 7-7, Greenhouse Gas Emissions per Service Population, shows the projected rate of GHG emissions of 3.85 MT CO₂e per service population. This value is above the threshold of significance of 1.44 MT CO₂e per service population. Therefore, the proposed project would have a significant impact from generating GHGs.

Mitigation is required to further reduce GHG emissions to below the threshold of significance. Emissions must be reduced by 11,177 MT CO₂e per year for the impact to be reduced to less than significant.

Project GHG Emissions per Service Population		
Total Mitigated Project GHG Emissions (MT CO ₂ e/year) ¹	17,876	
Service Population	4,638	
GHG Emissions per Service Population (MT CO ₂ e/year)	3.85	
Service Population Threshold of Significance (MT CO ₂ e/year)	1.44	
Rate of Proposed Project Emissions Exceeds Threshold?	YES	
Emissions Volume by which Threshold is Exceeded (MT CO ₂ e/year) ²	11,177	

Table 7-7 Greenhouse Gas Emissions per Service Population

SOURCE: EMC Planning Group 2022

NOTES:

1. Value taken from Table 7-6

2. 2.41 MT CO2e/service population over threshold x service population of 4,638

Mitigation Measures

7-1 If the County has not adopted a qualified climate action plan prior to the County's consideration of each future project-specific entitlement for development within the project site, individual project developers shall prepare a GHG Reduction Plan for their respective projects. Each GHG Reduction Plan shall include GHG reduction measures that reduce GHG emissions from each individual project to the equivalent of 1.44 MT CO₂e per service population per year. The GHG Reduction plan should be prepared a qualified air quality/GHG professional.

The service populations threshold of significance is based on an assumed buildout year of 2045 for all individual projects. A higher threshold of significance may be warranted for projects that build out prior to 2045. For such projects, individual project developers may provide substantial evidence that a higher threshold of significance is warranted. The evidence shall be based on the threshold of significance determination methodology utilized in this EIR. Any proposed change in the threshold of significance for individual projects or the threshold of significance determination methodology shall be subject to review and approval of the Merced County Planning Director.

Each GHG Reduction Plan shall list the planned reduction measures, identify reductions associated with each, and provide evidence supporting the level of reduction calculated for each. All measures within the control of individual project applicants shall be implemented and operational prior to occupancy of the associated project.

Each GHG Reduction Plan shall prioritize on-site GHG reduction design features and/or other project specific measures that are within the control of individual developers. If on-site measures are insufficient to achieve required reductions, direct investments in off-site GHG reduction activities/programs in the vicinity may be made. Examples of direct investments include building retrofit programs that pay for cool roofs, solar panels, solar water heaters, smart meters, energy efficient lighting energy efficient windows, and insulation. Other examples include financing programs for installing electric vehicle charging stations, electrifying school buses, or planting local urban forests.

If the GHG emissions reductions from on-site measures and/or investments in off-site reduction programs are insufficient to reduce project emissions to below the threshold of significance, the applicant may secure the reduction balance by purchasing and retiring carbon offset credits. The carbon offset credits shall meet the following performance standards:

- Carbon offset credits shall be issued by a recognized, reputable and accredited
 registry that mandates the use of established protocols for quantifying and issuing
 the offset credits. Credits issued based on protocols approved by the California Air
 Resources Board should be prioritized. Examples of such registries include the
 Climate Action Reserve, American Carbon Registry, and Vierra.
- In order of priority, the carbon offset credits should be obtained from projects developed in local vicinity/region, the state, national, or international projects. Priority is on offset credits available through registries approved by CARB. Credits from projects developed internationally should not be used unless the applicant demonstrates with substantial evidence that sufficient carbon offsets from projects in vicinity/region, state, or U.S. are unavailable. International offsets must be quantified and issued using established protocols that are recognized in the United States and that are issued by recognized, reputable and accredited registries.
- All carbon offset credits must meet the criteria of being real, quantifiable, permanent, verifiable, enforceable, and additional, consistent with the standards set forth in Health and Safety Code section 38562, subdivisions (d)(1) and (d)(2).

Individual project developers shall submit their respective GHG Reduction Plans for review and approval of the Community and Economic Development Department Director/Director's Designee prior to approval of project-specific entitlements. Implementation of the GHG reduction measures shall be made a condition of approval. If carbon offsets are proposed, applicants shall provide an executed contract or other certification to the Community and Economic Development Department Director/Director's Designee that the requisite carbon offset credits have been purchased. 7-2 If the County has adopted a qualified climate action plan prior to approval of any individual future project(s), conformance of individual projects with the applicable GHG reduction measures included in the climate action plan would serve as mitigation for GHG impacts of those projects. GHG Reduction Plans as identified in mitigation measure 7-1 would not be required. To ensure conformance with the climate action plan, individual project developers shall demonstrate that all applicable GHG reduction measures included in the climate plan have been incorporated into their respective project designs. Operational measures that are not physical project design features shall be required as conditions of project approval. Conformance with the climate action plan shall be verified by the Community and Economic Development Department Director/Director's Designee prior to approval of individual future projects.

Conflict with Plans for Reducing Greenhouse Gas Emissions

IMPACT 7-2Conflict with GHG Reduction Plans	Less than Significant with Mitigation
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As discussed in the Regulatory Setting section above, neither the County, nor the air district have adopted a qualified climate action plan or a GHG reduction plan that is applicable to the proposed project. Absent other local or regional plans for reducing GHGs, state legislative guidance embodied in SB 32, particularly the statewide GHG reduction target of 40 percent below 1990 levels by 2030, and the future 2050 reduction target embodied in Executive Order S-3-05 are considered to be the reference guidance for reducing GHGs that are applicable to the proposed project.

The threshold of significance identified above is based on a goal that GHG emissions in the County are reduced over time consistent with the noted state guidance. Because the proposed project would have a significant impact, it would conflict with the applicable guidance for reducing GHGs. The impact would be reduced to less than significant with implementation of mitigation measure 7-1.

If the County adopts a qualified climate action plan, it would become the applicable plan for reducing GHG emissions. In that case, individual future projects within the project site would not conflict with that plan given the requirement to implement mitigation measure 7-2 regarding required conformance with applicable GHG reduction measures included in the climate action plan.

8.0 Water Supply

This section of the SEIR assesses the adequacy of water supply for the proposed project and the effects of water supply demand on groundwater supply sustainability. Other hydrology related environmental effects including water quality, surface hydrology and flood hazards are evaluated in the initial study checklist included in Appendix A.

Information in this section is derived primarily from the following sources:

- Draft Environmental Impact Report for the Delhi Community Plan EIR (Merced County 2005);
- Bradbury Ranch Water Supply Assessment (QK 2022);
- Turlock Subbasin Groundwater Sustainability Plan (West and East Turlock Subbasin Groundwater Sustainability Agencies 2022); and
- Delhi Water and Sewer Systems Memo (QK 2022).

Responses to the Notice of Preparation

There were no responses to the NOP regarding hydrology and water quality.

8.1 Water Supply Setting

Existing Site Water Supply and Existing Agricultural Demand *Water Supply*

Irrigation water for existing agricultural uses within the project site is derived primarily from surface water delivered by the Turlock Irrigation District (TID). Water for existing residential uses is presumed to be provided by individual wells. The community plan EIR noted that for the community plan area as a whole, most irrigation water is provided by TID. Though it acknowledged that some agricultural supply may be provided by wells, the community plan EIR evaluated impacts of the community plan on groundwater supply with the assumption that all agricultural irrigation demand within the community plan boundary was met by surface water from TID. For consistency, this same assumption is made here.

Existing Water Demand

As noted previously, existing water demand within the project site is comprised of agricultural demand and incidental demand from existing residential uses. To estimate existing agricultural water

demand, the water demand for the typical types of crops grown on the site has been estimated. The project applicant identified that over the past five years, oats and corn have been the dominant crops types grown. Table 8-1, Estimated Annual Existing Agricultural Water Demand, shows that existing annual agricultural demand is estimated at about 739.2-acre feet (AF). Existing residential demand is not included, as it is inconsequential relative to agricultural demand.

Сгор Туре	Acreage ¹	Growing Season Water Demand/Acre ²	Water Demand (Acre-Feet/Year)
Oats	132	2.8	369.6
Corn	132	2.8	369.6
Total			739.2

Table 8-1 Estimated Annual Existing Agricultural Water Demand

SOURCE: Company 2021

NOTE:

1. Acreage in agricultural use was assumed to be the entire site size of 273 acres, minus approximately 9 acres associated with existing homes, for a total of 264 acres. It is further assumed each crop type is grown on one half of this area, or 132 acres.

2. Water demand per acre taken from Turlock Irrigation District 2021, Table 3-2, Dry Year Average for com and oats. Dry year average is assumed to be 33.5 inches/12 inches = 2.8 acre-feet per acre.

Irrigation water for on-site agricultural use is supplied by TID from surface water, and pumped from groundwater by wells within the site. A precise estimate of total use supplied by each source was not available. However, it is conservatively assumed that surface water from TID is the dominant source.

Urban Water Purveyor – Existing Supply and System Characteristics

The Delhi Community Water District (DCWD) is the urban water provider for development within its boundary, which includes the project site. Consequently, DCWD will provide water to new urban development within the project site. The DCWD extracts groundwater for all of its water supply.

To evaluate the sufficiency of water supply available to serve the proposed project, the *Bradbury Ranch Water Supply Assessment* (WSA) was prepared. The WSA can be found in Appendix D. A WSA is required pursuant to California Senate Bill 610 and California Sente Bill 221 for qualifying projects. These senate bills are summarized below in Section 8.2, Regulatory Setting. The purpose of a WSA is to evaluate sufficiency of water supply prior to approval of land development projects that are subject to the requirement. A WSA must be prepared for projects which, among other types of qualifying criteria, include more than 500 residential units, as does the proposed project. The WSA is commonly prepared by the water purveyor if that purveyor serves 3,000 or more connections. Since the DCWD serves less than 3,000 connections, the WSA was prepared by a consultant with input from the DCWD. The WSA is to be provided to the project decision making agency for its consideration prior to determining whether to approve or deny a subject project. The WSA was reviewed by County staff to validate its content and is included in this SEIR to assure its availability for review by the Merced County Board of Supervisors. A WSA commonly includes analysis of water supply sources to be used to supply a project, the adequacy of the water purveyor's supply system, and sufficiency of water supply under normal, dry, and drought water year conditions. The information here about existing conditions is taken primarily from the WSA. Discussion and conclusions from the WSA about water supply sufficiency are provided in Section 8.4, Analysis, Impacts and Mitigation.

DCWD Water Supply System

The DCWD services the Delhi community. Its service area is about 3.5 square miles. The population of the community as of the 2020 census was 10,656. At buildout, the proposed project would generate a population increase of about 4,180 people. Total population within the service area in 2040 is thus projected at about 14,836 people.

In 2020, the DCWD produced approximately 487.6 million gallons of water. Based on the 2020 community population, average per capita daily usage is estimated at about 125 gallons.

As described in the WSA, which includes review of the DCWD's water supply system, the existing DCWD water supply system is in adequate condition to meet existing water demand, with appropriate staffing and oversight. There are four active wells, with well design capacities of 1,300, 1,100, 1,000, and 600 gallons per minute. The distribution system is primarily composed of asbestos-cement and polyvinyl chloride pipe, primarily ranging in size from four to twelve inches in diameter. The system includes no storage tanks or booster pumps. The DCWD has found that the existing supply and distribution system has historically been reliable.

The quality of water provided by DCWD is presently in compliance with State water quality standards, with no known contaminants or quality issues at active wells. Well 9, which is not one of the four active wells providing water supply, is inactive at this time with nitrate levels above the State standards. Nitrate levels exceeding the State water quality standards have not been detected at any of the other system wells and so does not appear to be endemic to the groundwater supply.

Groundwater Basin Conditions and Management

Delhi is located within the boundaries of the Turlock Groundwater Subbasin. Two groundwater sustainability agencies are responsible for managing groundwater resources in the subbasin, the East Turlock Subbasin Groundwater Sustainability Agency and the West Turlock Subbasin Groundwater Sustainability Agency (GSA). The Delhi area is within the boundary of the West Turlock Subbasin GSA. Current and projected groundwater conditions in the broader Turlock Subbasin are identified in the *Turlock Subbasin Groundwater Sustainability Plan* (GWSP). Information here is taken directly from the GWSP. More information about the GWSP is found in the Regulatory Setting section below.

The two primary sources of water used in the Turlock Subbasin are surface water from the Tuolumne River and local groundwater. Surface water from the Merced River and stormwater provide additional water sources, as does reuse of municipal and industrial wastewater. No sources of imported water are available in the Turlock Subbasin. The Tuolumne River provides the largest supply of surface water, which is used primarily for irrigated agriculture. TID diverts water from this source for agricultural irrigation. TID manages groundwater and surface water conjunctively in its operations. Groundwater is pumped into TID canals to supplement surface water supplies. The Merced Irrigation District diverts and delivers water from the Merced River to lands in both the Turlock and adjacent subbasins, primarily for agricultural irrigation.

The GWSP identifies beneficial uses of surface water within the Subbasin along the Tuolumne River and the Merced River. Along Turlock the Tuolumne River from New Don Pedro Reservoir to the San Joaquin River, existing beneficial uses include agriculture, recreation, freshwater habitat, migration, spawning, and wildlife habitat. Along the Merced River, the existing beneficial uses between McSwain Reservoir and the San Joaquin River include municipal, agriculture, industry, recreation, freshwater habitat, migration, spawning, wildlife habitat and navigation. Table 2-1 in the GWSP shows that about 86 percent of all groundwater is used for agriculture, 9 percent for municipal and urban/industrial uses, and the remaining 5 percent for domestic wells/small water systems. Most of the urban communities within the Subbasin also rely on groundwater for almost all of their water supply. The cities of Turlock and Ceres account for most of the urban usage in the Subbasin, but numerous other communities, including Delhi, are also reliant on groundwater for drinking water supply.

Chronic lowering of groundwater levels and reduction of groundwater in storage (overdraft) occur primarily in the Eastern Principal Aquifer, which underlies a portion of the eastern part of the Subbasin to the east of Delhi. Associated water level declines have led to adverse impacts to public supply wells and domestic drinking water wells during recent drought conditions. Pumping in the Eastern Principal Aquifer has created a cone of depression in the central Subbasin that has expanded during the GWSP study period. Long-term rates of decline range from about two feet per year to about six feet per year within the cone of depression. Available data in the easternmost Subbasin are sparse, but water level declines between 2006 and 2017 are observed from about four feet per year to about eight feet per year. The groundwater elevation in Delhi area is the highest within the entire Subbasin.

No impacts from land subsidence have been documented to date in the Turlock Subbasin, although the western portion of the subbasin, including the Delhi area, may be susceptible to future subsidence if water levels continue to decline.

Changes in Groundwater in Storage

Chapter 5 of the GWSP includes evaluations of the groundwater budgets for the Turlock Subbasin. This information is critical for understanding and evaluating the sustainability of a groundwater basin. A groundwater budget takes into account the inflows to groundwater and the outflows from the subbasin. Water budgets are generally provided for three interconnected systems that define the overall hydrologic balance in the Turlock Subbasin, the land surface system, the stream and river system, and the groundwater system. Water budgets primarily reflect the movement of water through the integrated water system, and includes the surface processes (soil zone), stream system, and the groundwater system, as well as interaction among various systems forming the comprehensive water cycle for the Subbasin.

According to the GWSP, the average annual groundwater pumping in the subbasin to be 410,000 acre-feet per year (AFY). Of this, agricultural demand constituted approximately 351,000 AFY, with 39,000 AFY for municipal or urban use, and 20,000 AFY for domestic well or small water systems.

Agriculture is the dominant land use in the Turlock Subbasin. It is estimated to account for more than 66 percent of all land use.

Table 5-6 in the GWSP summarizes the average annual water groundwater budget for the Turlock Subbasin. For historical conditions over the years 1991-2015, the subbasin had an annual net decrease in groundwater in storage of about 63,900 AF. The year 2010 was used for evaluating current conditions because it was the last normal water year before the 2012-2015 drought. It represents the current level of development with current agricultural irrigation practices, land use, and urban water use under non-drought conditions and reflects most recent average surface water usage. For the year 2010, the subbasin had an annual net decrease in ground in storage of about 38,700 AF.

Although groundwater storage has decreased, the subbasin is not designated as being critically overdraft and there are no specific no specific requirements in place at this time that require reductions in groundwater extraction (QK 2022, p. 8).

8.2 Regulatory Setting

State

Senate Bill 610 - Water Supply Assessments

Public Resources Code section 21151.9 requires that a WSA be prepared for proposed projects as defined in the statute to ensure that long-term water supplies are sufficient to meet the project's demands in normal, single dry and multiple dry years for a period of 20 years. A WSA is required if a proposed action meets the statutory definition of a "project", which includes at least one of the following (Water Code Section 20912(a)):

- (a) "Project" means any of the following:
 - (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 project that includes one or more of the projects specified in this subdivision.
- (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections (California Department of Water Resources 2003)

A WSA must include water supply data and information relevant to the project in question, an evaluation of current use, a projection of anticipated demand sufficient to serve the project for a period of at least 20 years, delineation of proposed water supply sources, and an evaluation of water supply sufficiency under single year and multiple dry year conditions.

Senate Bill 221 - Written Verification of Water Supply

Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply. Senate Bill 221 is designed as a "fail-safe" mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs early in the planning process. This verification must also include documentation of historical water deliveries for the previous 20 years, as well as a description of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources of the region. Government Code Section 66473.7 (b) (1) states:

The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.

A city or county may attach conditions to assure there is an adequate water supply available to serve a proposed project as part of the tentative map approval process.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Brown signed into law Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319 (AB-1739, SB-1168, and SB-1319). This three-bill legislative package is known collectively as the Sustainable Groundwater Management Act (SGMA). The act was amended in the later part of 2015 by SB 13, SB 226 and AB 1390 to provide clarity to the original law and guidance on groundwater adjudications. SGMA defines sustainable groundwater management as the "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results." The legislation defines "undesirable results" to be any of the following effects caused by groundwater conditions occurring throughout the basin:

- Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply;
- Significant and unreasonable reduction of groundwater storage;
- Significant and unreasonable seawater intrusion;
- Significant and unreasonable degraded water quality;
- Significant and unreasonable land subsidence; and
- Surface water depletions that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

SGMA provides financial and enforcement tools to carry out effective local sustainable groundwater management through formation of groundwater sustainability agencies consisting of local public agencies, water companies regulated by the California Public Utilities Commission, and mutual water companies. Groundwater sustainability agencies within high- and medium- priority basins under the California Statewide Groundwater Elevation Monitoring Program subject to critical conditions of overdraft prepare and submit groundwater sustainability plans for the basin by January 31, 2020, and requires groundwater sustainability agencies in all other groundwater basins designated as high- or medium-priority basins to prepare and submit a groundwater sustainability plan by January 31, 2022. Following state approval, the basin would thereafter be managed under the groundwater sustainability plan.

The key intended outcomes and benefits of the Sustainable Groundwater Management Act are numerous, and include:

- Advancement in understanding and knowledge of the state's groundwater basins and their issues and challenges;
- Establishment of effective local governance to protect and manage groundwater basins;
- Management of regional water resources for regional self-sufficiency and drought resilience;
- Sustainable management of groundwater basins through the actions of Groundwater Sustainability Agencies, utilizing state assistance and intervention only when necessary;
- All groundwater basins in California are operated to maintain adequate protection to support the beneficial uses for the resource;
- Surface water and groundwater are managed as a single resource to sustain their interconnectivity, provide dry season base flow to interconnected streams, and support and promote long-term aquatic ecosystem health and vitality;
- A statewide framework for local groundwater management planning, including development of sustainable groundwater management best management practices and plans;
- Development of comprehensive and uniform water budgets, groundwater models, and engineering tools for effective management of groundwater basins;
- Improved coordination between land use and groundwater planning; and
- Enforcement actions as needed by the State Water Resources Control Board to achieve regionby-region sustainable groundwater management in accordance with the 2014 legislation.

The benefits of these outcomes include:

- A reliable, safe and sustainable water supply to protect communities, farms, and the environment, and support a stable and growing economy; and
- Elimination of long-term groundwater overdraft, an increase in groundwater storage, avoidance or minimization of subsidence, enhancement of water flows in stream systems, and prevention of future groundwater quality degradation.

SGMA is landmark legislation that, for the first time in the history of California, requires comprehensive groundwater management, with the mandatory goal of bringing all currently overdrafted basins into sustainable conditions by no later than 2040 or 2042, with five-year increments of progress starting in 2025 and 2027.

Urban Water Management Planning Act

California Water Code Section 10610 (et seq.) requires that all public water systems providing water for municipal purposes to more than 3,000 customers (connections), or supplying more than 3,000

AFY, must prepare an urban water management plan. Urban water management plans represent key water supply planning documents for municipalities and water purveyors in California. Urban water management plans must be updated at least every five years on or before December 31, in years ending in five and zero. The DCWD does not serve more than 3,000 connections, so it is not required to prepare an urban water management plan.

Local

Turlock Subbasin Groundwater Sustainability Plan

Pursuant to requirements identify in the SGMA as described above, the Turlock Subbasin GWSP plan was prepared in 2022 to guide groundwater sustainability planning for the subbasin. The subbasin has been designated a high-priority basin by the Department of Water Resources. The GWSP addresses issues associated with five groundwater sustainability indicators: chronic lowering of water levels, reduction of groundwater in storage, degraded water quality, inelastic land subsidence, and depletion of interconnected surface water. The GWSP contains a tremendous volume of data about hydrologic conditions in the subbasin; identifies historic, existing and projected groundwater conditions; and specifies groundwater projects and management actions needed to achieve groundwater supply sustainability.

To achieve the sustainability goal for the Turlock Subbasin, and to avoid undesirable results over the remainder of a 50-year planning horizon, projects and management actions have been developed by each of the two GSAs. A total of 23 projects were identified and categorized into three groups: Group 1 projects are already being constructed and will continue to be implemented, Group 2 projects are planned and will be implemented, and Group 3 projects have been identified and may be implemented in the future, as needed. Groups 1 and 2 include 11 projects, which were analyzed to estimate their benefits over the projected implementation and planning horizon. The individual project proponents are identified. None of the projects are in the immediate Delhi area or proposed by the DCWD. These projects are coupled with additional management actions that are composed of non-structural programs or policies designed to incentivize actions and strategies to support sustainability of the subbasin. These include demand reduction strategies (voluntary conservation and/or land fallowing), a pumping management framework, and domestic well mitigation program. All of the actions would be undertaken by both of the GSAs.

Merced County

Policy guidance from both the community plan and general plan is relevant to the proposed project. The policy guidance from each document listed below is limited to guidance that has direct relevance to planning for development within the project site and/or constructing future individual projects within the project site consistent with the proposed land uses.

Delhi Community Plan

Policy PS 1.1 - As development occurs ensure that adequate public services are provided.

Implementation Measure PS 1.1.a - Master plans and tentative subdivision maps shall identify the placement and sizing of necessary infrastructure (e.g., water, sewer, drainage) improvements.

Implementation Measure PS 1.1.c - New development project shall provide its proportionate share of the full range of urban level

Implementation Measure PS 1.1.d - Require preliminary "can and will serve" letter from the Delhi County Water District prior to processing a discretionary application (tentative map, conditional use application, or administrative application.

Merced County General Plan

Policy LU-5.F.4: Water Impacts - Prohibit new Urban Communities, or the expansion of existing urban communities, if they will negatively impact the water supply of existing users.

Policy W-1.1: Countywide Water Supply - Ensure that continued supplies of surface and groundwater are available to serve existing and future uses by supporting water districts and agencies in groundwater management and water supply planning; requiring that new development have demonstrated long-term water supply; and assisting both urban and agricultural water districts in efforts to use water efficiently.

Policy W-1.2: Demonstrating Sufficient Water Supply for New Development -Require all new development within the adopted service area of a water purveyor to demonstrate adequate quantity and quality of water will be available prior to issuing building permits.

Policy W-1.4: Groundwater Recharge Projects - Support implementation of groundwater recharge projects consistent with adopted Integrated Regional Water Management Plans to minimize overdraft of groundwater and ensure the long-term availability of groundwater.

Policy W-1.5: New Well Guidelines Coordinate with the cities and special districts in developing County-wide guidelines regarding the location and construction of new water wells.

Policy W-1.7: Water Sufficiency Requirement - Require new developments to prepare a detailed source water sufficiency study and water supply assessment per Title 22 and SB 610, consistent with any Integrated Regional Water Management Plan or similar water management plan. This shall include studying the effect of new development on the water supply of existing users, with public input.
Merced County Stormwater Management Regulations

The initial study checklist in Appendix A includes discussion of the County's stormwater regulations and how they serve to mitigate surface and groundwater quality impacts of urban development. Current stormwater management performance standards to reduce water quality impacts from new urban (non-industrial) development of the types included in the proposed master plan are described in detail in the Merced County Ordinance No. 1923. Ordinance No. 1923 includes standards for constructing site storm water runoff controls (e.g., to minimize potential release of contaminants and minimize potential for soil erosion), and post-construction storm water management goals for new and redeveloped areas. The latter include best management practices for controlling and treating runoff from new impervious and other surfaces prior to discharge to a storm water system. These practices include constructing stormwater detention facilities that are designed, in part, to hold and percolate stormwater back to groundwater. New development must comply with the uniformly applied performance standards in the Storm Water Management Program.

8.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of groundwater and water supply, as it does on a whole series of additional environmental topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of water supply impacts, or indeed on any subject addressed in the checklist. Rather, with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The County has done so here. Therefore, for purposes of this SEIR, a significant impact would occur if implementation of the proposed project would:

- Have insufficient water supply available to serve the project and reasonably foreseeable future development; during normal, dry and multiple dry years; or
- Substantially decrease groundwater supplies or conflict with or impede sustainable groundwater management, or obstruct implementation of a sustainable groundwater management plan.

8.4 Analysis, Impacts and Mitigation Measures

Water Supply Sufficiency

IMPACT 8-1	Sufficiency of Water Supply to Serve the Project	Less than Significant
IMPACT 8-1	Sufficiency of Water Supply to Serve the Project	Less than Significa

This section evaluates the projected demand for water supply from the project and whether that demand can be satisfied by the DCWD through its water production capacity from available sources.

Groundwater Demand Projections for the Proposed Project

The WSA projects water demand for the project based on a factor of 150 gallons per day per capita. With a buildout population of 4,180, water demand at buildout of the proposed is estimated at 627,000 gallons per day, or approximately 702 acre-feet per year. As all water that would be supplied to the project would come from the DCWD, water supply would be entirely from groundwater extracted by the DCWD to serve its customers. Though it is assumed that some portion of the existing on-site agricultural irrigation water is derived from groundwater, no reduction in the groundwater demand projection is taken to account for this baseline existing demand. Consequently, the projected demand volume is considered to be conservative.

GWSP Analysis of Future Groundwater Conditions/Groundwater Sustainability

The GWSP includes a projected water budget for the Turlock Subbasin. The projected budget assesses the conditions of the subbasin under projected water supply, agricultural and urban demand, and operational conditions. The projected conditions scenario applies future land and water use conditions to the 50-year historic hydrologic period of 1969-2018. Projected urban supplies and demand rely on urban water management plans for water purveyors that are required to prepare such plans. For other urban development, new demand is projected based on buildout of general plan land uses defined as of 2015. For the Delhi area, the community plan served as the general plan land use direction on which future demand within the DCWD was based in the GWSP. As shown in Table 5-6 of the GWSP, the annual amount of groundwater in storage is projected to decline by about 7,600 AF. This equates to the sum of decline within the West Turlock GSA boundary of about 5,100 AF and about 2,100 AF within the East Turlock GSA boundary. These declines are in the absence of implementing groundwater sustainability projects and groundwater management actions.

To achieve the sustainability goals for the subbasin, and to avoid undesirable results over the remainder of a 50-year planning horizon, as required by SGMA regulations, multiple projects and management actions have been identified and considered in the GWSP by the GSAs. These are discussed in Chapter 8 of the GWSP. "Projects" generally refer to physically constructed (structural) features whereas "management actions" generally refer to the non-structural programs or policies designed to incentivize actions that result in improvements in sustainability of the subbasin, including reductions in groundwater pumping or optimization of management of groundwater. Adaptive implementation of projects and management actions will be informed by ongoing monitoring of groundwater conditions using the monitoring network and methods described in the GWSP. Any adverse groundwater conditions or challenges in maintaining groundwater sustainability will be addressed by scaling and implementing projects and/or management actions in a targeted and proportional manner, consistent with conditions observed in the subbasin.

The general types of projects and management actions identified in the GWSP are summarized in the Regulatory Setting section above. As noted there, a number of projects have been implemented or are in the process of being implemented by a range of agencies, none of which include the DCWD and none of which involve the proposed project site or adjacent lands. The proposed projects will be either directly funded and implemented by GSAs, the respective project proponents with coordination with the GSAs, or will be subject of grant funding requests through state and federal funding opportunities.

Management actions may also be needed to ensure groundwater sustainability. A range of management actions are described in the GWSP. None of these are directly applicable to individual development projects per se, as none would be implemented directly by individual project developers. Instead, the GSAs would be responsible for implementing many of the actions, some in conjunction with urban water purveyors such as the DCWD and with other partners.

Groundwater Water Supply Sufficiency

The WSA includes a summary of groundwater supply reliability. It evaluates the subbasin as providing adequate groundwater storage resources (QK 2022, p. 9). As noted above, based on the GWSP, at this time, there are no management actions in the form of restrictions on groundwater pumping that apply within the subbasin and by extension, to the DCWD. Consequently, there are no current known constraints on DCWD's ability to serve new development from groundwater supply. The GWSP includes projects and management actions that will be implemented by the GSAs based on an adaptive management approach informed by ongoing monitoring of groundwater conditions. Any adverse groundwater conditions or challenges in maintaining groundwater sustainability will be addressed by scaling and implementing projects and/or management actions. The DCWD would be responsible for participating in the implementation process should any projects or actions be applicable to the DCWD.

DCWD Water Supply Reliability

To assess water supply system improvements that would be needed to serve the proposed project, the DCWD prepared an analysis titled *Delhi Water and Sever Systems Memo* (QK 2022a). The memo is attached to the WSA in Appendix D. Several water supply and distribution improvements are needed to ensure the reliability of the DCWD system to serve the project. These include a combination of water wells or a water well with storage tank, and distribution mains. These are discussed in Section 4.0, Project Description. Potential impacts of constructing these facilities are described in Section 11.0, Utilities.

The WSA includes an analysis of supply system reliability over time. Table 4-1 in the WSA shows that over the next 20 years, the DCWD's projected water supply source volume will meet water demands from the proposed project during normal, dry, and multiple-dry years.

Decrease in Groundwater Supply and/or Conflict with the Turlock Subbasin GWSP

IMPACT 8-2	Groundwater Demand and Conflict with the Turlock Subbasin GWSP Implementation	No Impact

The analysis considers the information contained in the GWSP and whether groundwater demand from the project was assumed in the GWSP as an input for assessing the sustainability of groundwater supply in the subbasin. The proposed project's potential to constrain the GSPs' ability to implement projects and management actions as may be required to ensure sustainability of the groundwater supply is also reviewed.

Project Water Demand Consistency with Turlock Subbasin GWSP Urban Water Demand Projections

As described under Impact 8-1 above, the GWSP projects future water demand within the subbasin based on urban water management plans for water purveyors required to prepare them and on general plan urban land use designations in urban areas where urban water management plans are not required. The latter condition applies to Delhi where the DCWD is not required to prepare an urban water management plan. For Delhi, the GWSP projected future water demand based on buildout of general plan land uses, which for Delhi, are identified in the community plan. Estimated water demand based on existing land use designations for the project site can be compared to estimated demand under the proposed land use designations to determine if the proposed project would result in a substantial increase in groundwater demand that was not anticipated in the GWSP. If no substantial increase is identified, the proposed project can be found not to be inconsistent with the GWSP (Michael Cook, Turlock Irrigation District, January 28, 2022, Email Communication with the Consultant).

Projected water demand under existing community plan uses for the project site and under the proposed land use scenario is summarized in Table 8-2, Change in Estimated Water Demand with the Proposed Project. The land use and acreage inputs to the table are from Table 4-2, Community Plan/Proposed Master Plan Development Capacity Comparison. The water demand factors are taken from the community plan EIR. It is important to note that the demand projection for the proposed project based on the community plan water demand factors differs from the projected water demand as estimated in the WSA. The WSA projection should be assumed as applicable. The analysis here is based on demand factors per land use type consistent with the GWSP analysis of future demands on groundwater based on general plan land use.

Existing Master Plan Land Use ^{1,2}			Proposed Master Plan Land Use ^{1,2}				
Land Use	Acres	Water Demand Factor ³ (gpd/ac)	Demand (gpd)	Land Use	Acres	Water Demand Factor (gpd/ac)	Demand (gpd)
Low Density Residential	105	1,215	127,575	Low Density Residential	176	1,215	213,840
Medium Density Residential	41	2,430	99,630	Medium Density Residential	23	2,430	55,890
Neighborhood Commercial	10	1,800	1,800	Neighborhood Commercial	10	1,800	18,000
Business Park	50	1,800	90,000	Business Park	0		0
Parks	25	1,215	30,375	Parks	33	1,215	40,581
Total Demand			349,380	Total Demand ⁴			328,311

Table 8-2 Change in Water Demand with the Proposed Project

SOURCE: Delhi Community Plan 2006, Delhi Community Plan EIR 2005, EMC Planning Group 2022 NOTE:

¹Water demand for planned school uses have not been included in the table. School demand is based on number of students per school type. No change in school related water demand would occur, as is it assumed that the same number of students would attend each school under both existing land use and proposed land use scenario for the project site.

²Water demand for a fire station is not included. The community plan identifies the need for a fire station within the Bradbury Ranch master plan site, but the community plan EIR does not account for water demand from this facility. It would be required under both the existing master plan land use plan and the proposed master plan land use plan – no change in demand would occur

³Demand factors taken from community plan EIR Table 4.5-1, Water Demand

⁴Total demand is conservative. The parks demand is based on park acreage that includes acreage committed to detention facilities from which no water demand would be generated.

As can be seen in Table 8-2, the proposed project would require approximately 21,069 gallons per day less water than would future development under the existing community plan land use scenario. This is equivalent to approximately 7,690,185 gallons per year or about 23 acre-feet per year – an approximately six percent reduction. Consequently, the proposed project would not conflict with GWSP assumptions about cumulative groundwater demand from future development within the community plan boundary.

Conflict with Groundwater Sustainability Projects and Management Actions in the GWSP

To achieve the sustainability goals for the Turlock Subbasin, and to avoid undesirable results over the remainder of a 50-year planning horizon as required by SGMA regulations, multiple projects and management actions have been identified and considered in the GWSP. These are discussed in Chapter 8 of the GWSP. "Projects" generally refer to physically constructed (structural) features whereas "management actions" generally refer to the non-structural programs or policies designed to incentivize actions that result in improvements in sustainability of the subbasin, including reductions in groundwater pumping or optimization of management of groundwater. Adaptive implementation of projects and management actions will be informed by ongoing monitoring of groundwater conditions using the monitoring network and methods described in the GWSP. Any adverse groundwater conditions or challenges in maintaining groundwater sustainability will be addressed by scaling and implementing projects and/or management actions in a targeted and proportional manner, consistent with conditions observed in the subbasin.

A number of groundwater sustainability projects identified in the GWSP have been implemented or are in the process of being implemented by a range of agencies, none of which include the DCWD and none of which involve the proposed project site or adjacent lands. The proposed projects will be either directly funded and implemented by GSAs, project proponents with coordination with the GSAs, or will be subject of grant funding requests through state and federal funding opportunities. The proposed project would not conflict with or interfere with GWSP project implementation.

Management actions may also be needed to ensure groundwater sustainability. A range of management actions are described in the GWSP. None of these are directly applicable to individual development projects per se, as none would be implemented directly by individual project developers. Instead, the GSAs would be responsible for implementing many of the actions, some in conjunction with urban water purveyors including the DCWD. Therefore, the proposed project would not conflict with or interfere with implementation of groundwater management actions.

Based on the analysis above, the proposed project would result in reduced groundwater demand relative to the existing Delhi Community Plan land use designations for the site and consequently, would not conflict with GWSP groundwater demand projections for the Delhi community plan area. Further, the proposed project would not conflict with or impede implementation of groundwater management projects or groundwater management actions identified in the GWSP as necessary to ensure sustainability of the groundwater supply. Consequently, the proposed would have no impact from conflict with the applicable groundwater sustainability management plan. This section of the SEIR examines project-generated noise sources and their impacts on both onand off-site sensitive receptors, as well as major off-site noise sources and their impact on future sensitive receptors within the project site. Noise sensitive receptors generally include residential development, schools, hospitals, nursing homes, churches and libraries. The significance of noise impacts is primarily determined based on whether noise exposure levels at sensitive receptors exceed noise standards identified in the general plan EIR and the municipal code.

The information within this section is largely sourced from the *Acoustical Analysis – Bradbury Ranch, Merced County/Delhi California* (WJV Acoustics 2022) ("noise report") and the *Bradbury Ranch Preliminary Analysis of Noise Mitigation Measures and Options* (WJV Acoustics 2022a). Both are included in Appendix E. Additional sources of information are introduced where applicable.

Responses to the Notice of Preparation

There were no responses to the NOP that are germane to this section of the EIR.

9.1 Environmental Setting

This environmental setting section incorporates information provided in the general plan EIR where applicable, new information that was not available at the time the general plan EIR was certified that is pertinent to assessing potential project impacts, and information specific to the proposed project and/or the project site.

Existing Noise Conditions at the Project Site

As described in the noise report, existing noise levels in the immediate project site vicinity are dominated by traffic noise along State Route 99, with noise from various agricultural activities a notable, but less substantial source. Noise from trains operating on the UPRR tracks adjacent to the site are also a notable, but intermittent noise source. The noise report identifies existing, ambient noise levels at the project site. These are presented in the Analysis, Impacts, and Mitigation Measures section below and compared to projected noise levels that would be generated by the proposed project.

There are several rural, single-family homes located along the segments of Bradbury and Vincent Road that are adjacent to the site, and other similar sensitive receptors along segments of these same roadways that are not adjacent to the site. Figure 9-1, Representative Sensitive Residential Receptor Locations, shows the locations of representative sensitive receptors at which potential noise exposure levels from the proposed project were evaluated.

Existing Noise Conditions in Potential Off-Site Improvement Locations

As described and illustrated in Section 4.0, two off-site water supply distribution and one off-site sewer collection main and lift station must be constructed to serve the project. Additionally, ancillary pipeline and paving improvements are required at the existing wastewater treatment plant to ensure adequate treatment capacity is available to serve the proposed project.

Several homes are located along the proposed off-site sewer main route that extends south from the site down Vincent Road to 4th Street to the terminus of 6th Street. There are no sensitive receptors located along the off-site routes for new water distribution mains or in the immediate vicinity of the wastewater treatment plant.

9.2 Regulatory Setting

The Merced County general plan health and safety element is the primary source of noise exposure standards and regulations that are applicable for assessing environmental impacts of the proposed project. The community plan includes two noise policies that largely replicate those contained in the general plan noise element and therefore, are not presented here. The Merced County Code also includes an applicable regulation.

Merced County General Plan

The health and safety element establishes noise level criteria for both transportation and nontransportation (stationary) noise sources. For transportation noise sources, the noise level criteria are presented in terms of the Day-Night Average Level (Ldn/DNL) metric. The Ldn is the timeweighted energy average noise level for a 24-hour day, with a 10 decibel (dB) penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). Key polices are as follows:

Policy HS-7.1 - Noise Standards for New Land Uses (RDR) - Require new development projects to meet the standards shown in Tables HS-1 and HS-2, at the property line of the proposed use, through either project design or other noise mitigation techniques.





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Receptor Location

Source: WJV Acoustics

Figure 9-1 Representative Sensitive Residential Receptor Locations

Delhi Community Plan Supplemental EIR

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Table HS-1 of the general plan provides the maximum allowable exterior and interior noise exposure levels for various land use types. For residential land uses, the noise level standards typically apply to outdoor activity areas. Outdoor activity areas generally include backyards of single-family residences and individual patios or decks and outdoor common use areas of multi-family residential developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation. Table HS-1 also provides interior noise level standards. For residential land uses, and interior noise level standard 45 dB Ldn is applied. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep. Table HS-1 is shown in Figure 9-2, General Plan Noise Level Standards – Transportation Noise Sources.

Table HS-2 of the general plan provides the maximum allowable exterior and interior noise level standards for non-transportation (stationary) noise sources. Daytime is considered 7:00 a.m. to 10:00 p.m., and nighttime is considered 10:00 p.m. to 7:00 a.m. Table HS-2 is shown in Figure 9-3, Non-Transportation Noise Level Standards.

Policy HS-7.2 - Acoustical and Groundborne Vibration Analysis Requirements -Require development project applicants to prepare an acoustical analysis as part of the environmental review process when noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels shown in Tables HS-1 and HS-2. Require an analysis of groundborne vibration for proposed residential and other sensitive projects (including but not limited to hospitals and schools) located within 1,000 feet of a rail line with at least 30 operations per day or an existing industrial groundborne vibration source.

Policy HS-7.4 - New Noise or Groundborne Vibration Generating Uses (RDR -Require new commercial and industrial uses to minimize encroachment on incompatible noise or groundborne vibration sensitive land uses. Also consider the potential for encroachment by residential and other noise or groundborne vibration sensitive land uses on adjacent lands that could significantly impact the viability of the commercial or industrial areas.

Policy HS-7.5: Noise Generating Activities - Limit noise generating activities, such as construction, to hours of normal business operation.

Policy HS-7.7: Noise or Vibration Impacted Residential Area Monitoring -Consider any existing residential area "noise or vibration impacted" if the exposure to exterior noise exceeds the standards shown in Table HS-2 or if groundborne vibration levels exceed 70VdB. Identify and evaluate potential noise or groundborne vibration impacted areas and identify possible means to correct the identified noise/land use incompatibilities.

Policy HS-7.8: Project Design - Require land use projects to comply with adopted noise and vibration standards through proper site and building design, such as building orientation, setbacks, natural barriers (e.g., earthen berms, vegetation), and building construction practices. Only consider the use of sound walls after all design-related noise mitigation measures have been evaluated or integrated into the project or found infeasible.

Policy HS-7.12: New Project Noise Mitigation Requirements - Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development.

Policy HS-7.13: Noise Exemptions - Support the exemption of the following noise sources from the standards in this element:

- a) Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during daytime hours.
- b) Activities at schools, parks, or playgrounds, provided such activities occur during daytime hours.
- c) Activities associated with County-permitted temporary events and festivals.

Policy HS-7.15: New Project Groundborne Vibration Mitigation Requirements -For residential projects within 1,000 feet of a rail line with at least 30 operations per day, or an existing industrial or commercial groundborne vibration source, require new residential projects to include appropriate groundborne vibration mitigation measures to reduce groundborne vibration levels to less than 70 VdB within structures. However, if a groundborne vibration generating use is proposed adjacent to lands zoned for residential uses, then the groundborne vibration-generating use shall be responsible for mitigating its groundborne vibration generation to a state of compliance with the 70 VdB standard at the property line of the generating use in anticipation of the future residential development.

Merced County Code

Section 10.60.030 (B5) of the Merced County Ordinance Code (Noise Source Exemptions) states that noise associated with construction activities would be exempt from the noise standards provided above, provided that all construction in or adjacent to urban areas shall be limited to the daytime hours between 7AM and 6 PM, and all construction equipment shall be properly muffled and maintained.

TABLE I

MERCED COUNTY GENERAL PLAN NOISE LEVEL STANDARDS TRANSPORTATION NOISE SOURCES

New Land Use	Sensitive Outdoor Area ¹ -L _{dn}	Sensitive Interior Area ² - L _{dn}	Notes
All Residential	65	45	3
Transient Lodging	65	45	3,4
Hospitals & Nursing Homes	65	45	3,4,5
Theaters & Auditoriums		35	4
Churches, Meeting Halls	65	40	4
Schools, Libraries, etc.	65	40	4
Office Buildings	65	45	4
Commercial Buildings		50	4
Playgrounds, Parks, etc.	70		
Industry	65	50	4

1. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied.

2. Sensitive Interior Areas includes any interior area associated with any given land use at which noise sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.

3. Railroad warning horn usage shall not be included in the computation of Ldn.

4. Only the interior noise level standard shall apply if there are no sensitive exterior spaces proposed for these uses.

5. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.

Source: WJV Acoustics 2022

Figure 9-2 General Plan Noise Level Standards

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TABLE II

MERCED COUNTY GENERAL PLAN NOISE LEVEL STANDARDS NON-TRANSPORTATION NOISE SOURCES MEDIAN (L50) / MAXIMUM (LMAX)¹

Outdoor	Interior ³	Notos			
Receiving Land Use	Daytime	Nighttime	Day or Night	Notes	
All Residential	55 / 75	50 / 70	35 / 55		
Transient Lodging	55 / 75		35 / 55	4	
Hospitals & Nursing Homes	55 / 75		35 / 55	5,6	
Theaters & Auditoriums			30 / 50	6	
Churches, Meeting Halls	55 / 75		35 / 60	6	
Schools, Libraries, etc.	60 / 75		35 / 60	6	
Office Buildings	55 / 75		45 / 65	6	
Commercial Buildings	55 / 75		45 / 65	6	
Playgrounds, Parks, etc.	65 / 75			6	
Industry	60 / 80		50 / 70	6	

1. These standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards in this table, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.

2. Sensitive Outdoor Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied.

3. Sensitive Interior Areas includes any interior area associated with any given land use at which noise sensitivity exists and the location at which the County's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.

4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.

5. Since hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital staff or patients.

6. The outdoor activity areas of these uses (if any) are not typically used during nighttime hours.

7. Where median (L50) noise level data is not available for a particular noise source, average (Leq) values may be substituted for the standards of this table provided the noise source operates for at least 30 minutes. If the source operates less than 30 minutes the maximum noise level standards shown shall apply.

Source: WJV Acoustics 2022

Figure 9-3 Non-Transportation Noise Level Standards

Delhi Community Plan Supplemental EIR

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9.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of noise, as it does on a whole series of additional environmental topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of noise impacts, or on any subject addressed in the checklist. Rather, with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The City has done so here. Therefore, for purposes of this EIR, a significant impact would occur if implementation of the proposed project would:

 Generate substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The general plan noise standards for transportation noise sources, stationary sources, and construction noise, as referenced in Section 9.2 above, are used as thresholds of significance in the respective impact discussions below. Standards for limiting hours of construction activities are identified in the municipal code as noted above.

• Generate excessive groundborne vibration or groundborne noise levels.

Checklist Questions Deemed Not Applicable

• For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

There are no private or public airports or an airport land use plan adopted within two miles of the project site. As such, the proposed project would have no impact due to exposing people residing or working in the project area to excessive airport related or aircraft overflight noise levels. No further discussion of this issue is necessary.

9.4 Analysis, Impacts, and Mitigation Measures

Construction Noise

IMPACT 9-1

On- and Off-Site Construction Activities Causing a Substantial Temporary Noise Increase

Less than Significant

On-Site and Off-Site Construction Effects

Construction noise would occur at various locations within and near the project site through the buildout period (approximately 20 years) and at locations where off-site water and sewer main and

sewer treatment plant improvements are required. Existing sensitive receptors could be located as close as 150 feet from construction activities within the site and along potential off-site circulation improvement areas as illustrated in Figure 9-1. See the noise report in Appendix E for additional background discussion about construction noise. Several homes are located along the proposed off-site sewer main route; none are located along or near other off-site improvement locations.

Section 10.60.030 (B5) of the Merced County Ordinance Code identifies that construction activities are exempt from the noise standards identified in the general plan provided construction activities are limited to the hours of 7:00 AM to 6:00 PM and equipment is properly muffled. General plan policy HS-7.5 and Merced County Code section 18.40.050(E) require activities, including construction activities to hours of normal business operation; the hours of 7:00 AM to 6:00 PM are considered inclusive of normal business hours. The County would condition construction activities to be limited to the above noted hours consistent with the noted County Code regulation. Consequently, construction noise impacts would be less than significant.

Traffic Noise at Existing Off-Site Receptors

IMPACT 9-2	Project-Generated Traffic that Increases Noise Levels at Off-Site Sensitive Receptors	Less than Significant
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Traffic Noise Effects

Off-Site Sensitive Receptors (Existing Conditions)

The noise report modeled traffic noise using the Federal Highway Administration Traffic Noise Model to quantify expected project-related increases in traffic noise exposure along roadways in the project vicinity. The Federal Highway Administration Model is a standard analytical method used by state and local agencies for roadway traffic noise prediction. The model is based upon reference energy emission levels for automobiles, medium trucks (two axles) and heavy trucks (three or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The model is accurate within ± 1.5 dB.

Traffic noise exposure levels for Existing, Existing Plus Project, 2045 and 2045 Plus Project traffic conditions were calculated the model and traffic volumes provided by KD Anderson & Associates. In order to estimate future (2045) traffic volumes, WJV applied a one percent annual rate of increase in traffic along analyzed roadways. The rate of increase is commensurate with the anticipated population growth rate within Merced County. The overall percentages of trucks and the day/night distribution of traffic used for modeling was estimated based upon previous studies WJV has conducted along similar roadways. The noise modeling assumptions used to calculate project traffic noise are provided in the noise report in Appendix E.

Project-related significant impacts would occur if an increase in traffic noise associated with the project would result in noise levels that exceed the County's applicable noise level standards at the

location(s) of representative sensitive receptors as identified in Figure 9-1. For the purpose of this analysis, a significant impact was also assumed to occur if traffic noise levels were to increase by the noise intensities identified in general plan policy HS-7.9 as follows: 1) 5 dB increase where existing noise levels are below 60 dB Ldn; 2) 3 dB increase where existing noise levels are between 60 to 65 dB Ldn; and 3) 1.5 dB increase where existing noise levels exceed 65 dB Ldn.

Table 9-1, Existing Plus Project Increases in Traffic Noise, shows changes in noise intensities at the representative receptor locations when project traffic is added to existing traffic volumes. With the addition of project traffic, traffic noise volumes would not exceed the allowable exterior noise standard of 60 dB L_{dn}; traffic noise impacts on off-site receptors would be less than significant.

Receptor	Existing	Existing + Project	Change	Significant Impact?
R-1	58	58	0	No
R-2	56	60	4	No
R-3	47	47	0	No
R-4	56	59	46	No
R-5	53	54	1	No
R-6 ²	58	58	0	No
R-7	52	52	0	No
R-8	54	55	1	No

 Table 9-1
 Existing Plus Project Increases in Traffic Noise

SOURCE: WJV Acoustics, Inc. 2022 NOTE: Noise levels are dB, Ldn

Proposed Operational Commercial Use Stationary Noise Effects

IMPACT 9-3

Commercial Use Stationary Noise Sources Resulting in a Permanent Substantial Noise Increase Less than Significant with Mitigation

Proposed Commercial Use Noise Effects

The project would include land uses identified as Neighborhood Commercial. From the perspective of the County's noise standards, noise sources not associated with transportation sources are considered stationary noise sources. A wide variety of stationary noise sources can be associated with commercial land use designations. Typical examples for a commercial use include:

- Fans and blowers;
- HVAC units;
- Truck deliveries;

- Loading Docks; and
- Compactors.

The noise levels produced by such sources can be highly variable and could potentially impact existing off-site and proposed on-site sensitive receptors. There are existing residential land uses located offsite approximately 700 feet southeast of the proposed neighborhood commercial use. Planned on-site noise-sensitive residential uses border the neighborhood commercial use site on the north (low density residential) and west (medium density residential).

Noise levels from new stationary noise sources cannot be predicted with any certainty at this time since specific end uses have not yet been proposed and the precise locations of stationary noise sources relative to the locations of existing or planned new noise-sensitive uses are not known. Potential exists for noise from these uses to exceed the County stationary noise standards. This would be a potentially significant impact.

Noise levels from new stationary noise sources may be effectively mitigated by incorporating noise mitigation measures into the project design that consider the geographical relationship between the noise sources of concern and potential receptors, the noise-producing characteristics of the sources and the path of transmission between noise sources and sensitive receptors. Options for noise mitigation include building setbacks, constructing sound walls, employing noise source equipment enclosures, shielding noise equipment, etc.

The following mitigation measure would reduce this potential impact to a less-than-significant level by requiring additional noise analysis, and mitigation if required, once the types and locations of stationary commercial noise sources are identified as part of the future planning and entitlement process for developing the neighborhood commercial use.

Mitigation Measure

9-1 The applicant shall prepare an acoustical analysis to define the site-specific potential impacts of stationary commercial noise sources. The potential for these noise sources uses to exceed applicable County noise standards at adjacent noise sensitive uses shall be identified. If significant impacts are identified, mitigation measures shall be identified to reduce impacts to less than significant by ensuring compliance with the County noise standards. Mitigation could include, but may not be limited to: site design to separate commercial uses from adjacent sensitive residential uses, building setbacks, noise equipment enclosures, etc. The acoustical analysis shall be subject to review and approval of the Community and Economic Development Department Director/Director's Designee prior to approval of entitlements for future site-specific commercial projects.

Groundborne Vibration Effects

IMPACT 9-4 Groundborne Vibration Intensity from Construction Activities Affecting Sensitive Receptors

Groundborne Vibration (On and Off-Site)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these activities are anticipated to occur with construction or operation of the proposed project, with the exception of demolition of on-site structures. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities. According to the project noise report, these levels would not be expected to exceed any significant threshold levels for annoyance or damage shown in Figures 9-2 and 9-3.

After full project build out, it is not expected that on-going operational activities would result in vibration impacts at nearby sensitive uses. Activities involved in trash bin collection could result in minor on-site vibrations as the bin is placed back onto the ground. Such vibrations would not be expected to be felt at the closest off-site sensitive uses. Consequently, the proposed project is not expected to be a source of vibration during either construction or operation. This impact is less than significant and no mitigation measures are required.

Traffic Noise from Bradbury, Vincent, and Shanks Roads

IMPACT	Traffic Noise on Shanks Road that Affects Planned On-	Less than Significant
9-5	Site Sensitive Receptors	with Mitigation

As shown in Figure 9-3, noise levels of up to 65 dB from transportation sources are acceptable at the outdoor areas of noise-sensitive land uses, including residential uses and schools. WJV modeled the distances from the centerlines of Bradbury, Vincent, and Shanks roads to the 65 dB Ldn noise exposure contours along each road as would occur under existing plus project conditions to assess whether noise sensitive uses within the site could be exposed to traffic noise levels that exceed this standard. Table 9-2, Noise Contour Distances for Bradbury, Vincent, and Shanks Road, shows the results.

A significant noise impact would occur if future noise sensitive residential and/or school uses are located within the contour distances. The potential for noise-sensitive uses to be impacted must be evaluated in the context of future planned improvements to these three adjacent roads and the resulting distances from their centerlines to future on-site noise-sensitive uses as discussed below.

Road Segment	Distance (Feet) to 65 dB Ldn Contour – Existing Plus Project Conditions ¹
Bradbury Road (SR 99 to Vincent Road)	47
Vincent Road (Bradbury Road to North Road)	41
Vincent Road (North Avenue to Shanks Road)	59
Shanks Road (SR 99 to Vincent Road)	60

Table 9-2 Noise Contour Distances for Bradbury, Vincent, and Shanks Road

SOURCE: WJV Acoustics, Inc. 2022

NOTE:

1. Distances are from the centerlines of the respective roadways.

Bradbury Road

As shown in Figure 4-5, Planned Street Sections, the future developer(s) of the project site will be required to improve Bradbury Road and Vincent Road to the standards shown in the figure. Bradbury Road would have an ultimate right-of-way of 137 feet. With the required improvements, the distance from the center of the travel lanes to the edge of the developable portion of the project site would be the sum of the widths of the landscaping, class I bicycle lane, landscaping, shoulder, two travel lanes, and half the landscaped median, or 81 feet (the portion of the total road section that includes the bicycle lane would be constructed along the south side of Bradbury Road adjacent to the project site). Therefore, with these required improvements, no sensitive residential or school receptors within the site would be within the 65 dB noise contour as adjusted to account for this improvement. Therefore, traffic noise impacts on sensitive receptors within the site would be less than significant.

Vincent Road

Vincent Road is planned with an ultimate right-of-way of 108 feet. Per its section in Figure 4-5, the distance to the developable portion of the site from the planned centerline of the travel lanes would be 54 feet. For the segment between Bradbury Road and North Avenue, no portion of the project site containing noise sensitive residential or school uses would be within the 65 DB traffic noise contour.

For the segment of Vincent Road between North Avenue and Shanks Road, a portion of the project site would be within the 65 dB traffic noise contour. However, this portion of the site is planned for neighborhood commercial use, which is not considered a noise sensitive use. Therefore, the impact is considered to be less than significant. The general plan does include an interior noise standard of 55 dB for commercial uses. Conformance with this uniformly applied interior noise standard would be required and verified as part of the building permit process for the future commercial use.

Shanks Road

A transportation impact analysis was prepared for the proposed project to assess the vehicle miles traveled effects of the project and to evaluate its operational impact on the local roadway network and on State Route 99. The *Transportation Impact Analysis for the Bradbury Ranch Master Pan* (KD Anderson and Associates 2022) is discussed in more detail in Section 10.0, Transportation, in this SEIR. The operations analysis concluded that Shanks Road should be widened to the local minor collector roadway standard identified in the community plan to accommodate new traffic that would be generated by the proposed project. A minor collector has a 68-foot right-of-way, with a 34-foot half section. Along Shanks Road, the 65 dB noise contour from traffic-generated noise is projected at 60 feet from the centerline of the road. Therefore, an approximately 26-foot-wide portion of the southern edge of the project site would be located within the 65 dB contour. If outdoor activity areas of noise sensitive uses were placed within this area, a significant noise impact could occur.

Only about a 400-foot segment of Shanks Road extending from Vincent Road to the west is at grade with the site. Along this segment, only non-noise-sensitive neighborhood commercial uses are planned within the site. As the rest of the Shanks Road segment extending between Vincent Road and State Route 99 approaches State Route 99 from the east, the road begins to increase in elevation as it climbs the abutment built to elevate the road over the highway. The portion of the site designated medium density is located along this segment. As the road climbs towards State Route 99, the abutment slope increasingly separates the road from the level, buildable area of the site. Near State Route 99, the level portion of the site is more than 100 feet from the center line of the road. However, nearer Vincent Road, it is possible that a small portion of the medium density residential area could be within the 65 dB contour. If outdoor activity areas were placed in this area, a significant impact would occur.

The following mitigation measure is proposed to reduce potential project-generated traffic noise impacts at the proposed medium density uses located along Shanks Road.

Mitigation Measure

9-2 Outdoor activity areas of residential units proposed within 60 feet of the centerline of Shanks Road shall be located outside the 65 dB contour along Shanks Road as identified in the *Acoustical Analysis – Bradbury Ranch, Merced County/Delhi California* (WJV Acoustics 2022) or by shielding such activity areas from traffic noise along Shanks Road to the satisfaction of the Community and Economic Development Department Director/Director's Designee. The 65 dB contour is located 60 feet from the centerline of Shanks Road. Implementation of this mitigation shall be verified by the Community and Economic Development Director's Designee prior to approval of building permits for such residential units.

Implementation of this mitigation would reduce the significant impact to less than significant by ensuring that outdoor activity areas of noise-sensitive residential uses are not exposed to traffic noise levels that exceed County standards.

Traffic Noise from State Route 99/UPRR Train Noise

IMPACT
9-6Combined State Route 99/Train Noise that Affects
Planned On-Site Sensitive Receptors

Less than Significant with Mitigation

The project site is bordered to the west by the UPRR and State Route 99. The UPRR is directly adjacent to the site and State Route 99 is directly adjacent to the UPRR. Refer to Figure 3-2, Existing Conditions, for the locations of each. Each of these features is a significant source of noise whose combined effects would affect would affect future development within the project site. Noise characteristics of each source and the combined effect of both sources are described below.

State Route 99 Traffic Noise

WJV used the above-described Federal Highway Administration traffic noise model and traffic data provided by Caltrans to model existing traffic noise exposure within the project site. For future 2045 project site buildout conditions, WJV applied an annual growth rate of 1.8 percent to existing traffic volumes to project 2045 traffic volumes on the highway. The 1.8 percent rate was derived from the average annual increase in volumes between 2013 and 2020 as reported by Caltrans. The proposed project would contribute traffic on the highway, the volumes of which are assumed to be captured in the projected volume. At a setback distance of 250 feet from the centerline of the highway, traffic noise exposure for existing and 2045 traffic conditions were calculated at 72.5 dB Ldn and 74.0 dB Ldn, respectively.

UPRR Train Noise

According to data provided by the U.S. Department of Transportation Federal Railroad Administration, approximately 14 train operations occur per day along the UPRR. Train operations can occur at any time throughout the day and night. For the purpose of this analysis, it was assumed that the 14 daily train operations are evenly distributed throughout the 24-hour day. Noise levels from a total of four train movements were measured within the project site at a setback distance of approximately 125 feet from the railroad track as a basis to assess existing and projected train noise levels. The four train movements produced an average sound exposure level (SEL) of 97.5 dB. The SEL is a measure of the total energy of a noise event, including consideration of event duration as describe further in the noise report. SEL can be converted to Ldn based on a calculation methodology described in the noise report. Existing train noise was calculated to be 67.3 dB Ldn, at a setback distance of 100 feet from the railroad line, which is the approximate setback distance of closest proposed residential land uses.

Combined Highway and Train Noise

Using the information for the individual sources described above, WJV calculated the noise levels for the combined sources at various distances within project site as measured from the UPRR, the closest of the two sources. The results are summarized in Table 9-3, Noise Contour Distances for Combined State Route 99/UPRR Train Sources.

Combined State Route 99/UPRR Train Noise Exposure				
Distance (Feet) From Union Pacific Railroad	Distance (Feet) to 65 dB Ldn Contour – Existing Plus Project Conditions			
100	74			
150	73			
200	72			
250	71			

SOURCE: WJV Acoustics, Inc. 2022

Using the information in Table 9-3, the setback distance to the 65 dB Ldn noise contour for the combined noises sources under 2045 cumulative traffic conditions on State Route 99 was calculated to be 905 feet from the UPRR, the approximate location of which is illustrated in Figure 9-4, Combined State Route 99/UPRR Train Noise 65 dB Ldn Noise Contours.

Areas planned for noise sensitive residential uses per the proposed project would be located within the projected 2045 65 dB Ldn noise contour. These uses would be exposed to exterior noise levels that exceed the 65 dB Ldn standard. This is a significant impact.

Applicant Noise Mitigation Analysis

Noise levels from transportation noise sources may be mitigated by incorporating noise mitigation measures into the project design that consider the geographical relationship between the noise sources of concern and potential receptors, the noise-producing characteristics of the sources and the path of transmission between noise sources and sensitive receptors. Options for mitigating exterior noise levels at outdoor activity areas of residential uses include building setbacks, placing residential structures between the noise source and outdoor activity areas so that the buildings shield outdoor areas from noise, constructing noise barriers/sound walls, etc.

Subsequent to completion of the project noise report, the applicant submitted a noise mitigation analysis to address noise impacts from these combined noise sources. The *Bradbury Ranch Preliminary Analysis of Noise Mitigation Measures and Options* (WJV Acoustics 2022) ("noise mitigation report") examined combinations of sound walls, residential use setback distances from the sources, and project design features (e.g., placement of outdoor activity areas of noise sensitive residential uses) to

identify which have potential reduce noise exposure impacts to less than significant. The noise mitigation report is included in Appendix E. The analysis is considered to be an initial feasibility assessment, as variables such as finished grade elevation of the project site, feasible location of a sound wall relative to the noise sources, and precise locations of residential units/outdoor activity areas are not currently known.

Noise exposure levels resulting from various wall heights at various setback distances were modeled. The results, included in Table III of the noise mitigation report, show that various combinations of sound wall heights and residential use setbacks could reduce noise exposure at residential uses to below the exterior exposure limit of 65 dB. For example, a 12-foot high soundwall combined with a 150-foot setback from the UPRR rail tracks would reduce exterior noise levels to 64 dB. A 10-foot-high wall with a 200-250-foot setback would achieve the same noise attenuation, as would a 9-foot-tall wall and a 350-foot setback. These results assume no acoustical shielding is provided by the residential structures themselves. Additional options could be incorporated into the project design that could potentially reduce the wall height requirements. These measures could include placing outdoor activity areas on the opposite side of buildings from the noise source or omitting individual unit balconies and patios in the first block of multi-family units close to and facing the noise source.

The noise mitigation analysis demonstrates that sound wall, setback and site design noise mitigation options are possible whose implementation would reduce this noise impact to less than significant. Detailed analysis will be required as part of future tentative map or other project-specific entitlements processes to define the precise mitigation approach to be employed. The following mitigation measure ensures that this analysis will be conducted, with specific measures to be reflected in detailed improvement plans for individual future projects.

Mitigation Measure

9-3 Developers of future residential projects located wholly or partially within the 65 dB Ldn noise contour for combined State Route 99 and UPRR train noise shall prepare and implement a detailed noise mitigation plan which defines the combination of noise mitigation options (soundwalls, setbacks and site design measures) to be employed to reduce noise exposure levels at outdoor activity areas to less than 65 dB Ldn. Locations and specifications for soundwalls shall be shown on tentative maps or other projectspecific development plants. The noise mitigation plan and project plans shall be subject to review and approval of the Community and Economic Development Department Director/Director's Designee prior to approval of entitlements for future residential projects.



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School Use and Fire Station Use Noise Generation Effects

Potential noise impacts from future development of the proposed school and fire station sites use are not evaluated. Per general plan policy HS-7.13 described above, activities at schools, parks, or playgrounds, and fire stations (e.g., emergency warning sirens and vehicle movements) are exempt from meeting the County's noise regulations. Consequently, no further analysis is required.

Acting as lead agency, at the time the Delhi Unified School District proposes to develop the school site, it would be required to comply with CEQA by preparing environmental documentation to assess the project-specific impacts of such development. Similarly, the County would be the lead agency for developing the proposed fire station site. If noise-generating activities at either site were to be proposed that could be exceptions to typical noise sources associated with these uses and that could adversely affect planned future adjacent noise sensitive residential uses, project specific noise analyses would be required, with mitigation required for to reduce significant noise impacts.

Vibration Impacts from UPRR Train Operations

Policy HS-7.2 of the general plan states that an analysis of groundborne vibration is required for proposed residential and other sensitive projects (including but not limited to hospitals and schools) located within 1,000 feet of a rail line with at least 30 operations per day or an existing industrial groundborne vibration source. This component of Policy HS-7.2 was added to the general plan based on analysis of potential rail line vibration impacts included in the general plan EIR. Consequently, vibration impacts from fewer than 30 operations are assumed not to be less than. The project would include residential land uses within 1,000 feet of the UPRR rail line (Union Pacific). However, according to data provided by the U.S. Department of Transportation Federal Railroad Administration, approximately 14 trains pass by the site per day. Therefore, no associated vibration study was conducted and the associated vibration impacts would be less than significant.

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10.0 Transportation

This section of the SEIR focuses on evaluating the vehicle miles traveled (VMT) impacts of the proposed project. The topic of VMT was not a subject of analysis under CEQA when the community plan EIR was certified. This topic is being addressed in this SEIR as it represents new information that could give rise to new significant impacts of the proposed project that were not addressed in the community plan EIR. It also addresses project consistency with applicable County plans regarding alternative transportation modes including pedestrian, bicycle, and transit movement.

The information in this section is largely taken from the *Transportation Impact Analysis for the Bradbury Ranch Master Plan* (KD Anderson and Associates 2022) ("transportation analysis"). The transportation analysis is included as Appendix F. Additional sources of information are introduced where applicable. The transportation analysis includes evaluations of bikeway, pedestrian and transit services, and evaluates the project VMT impact. It also includes discussion of the existing traffic network, and evaluates project impacts on the operations of that network (level of service analysis). This latter discussion is provided for informational purposes, as reporting of project impacts on traffic impacts is not a required component of the CEQA analysis of transportation effects.

Responses to the Notice of Preparation

As part of its comments on air quality, the air district recommended that the SEIR incorporate strategies that reduce VMT, including mixed-use development and walkable communities.

10.1 Environmental Setting

Vehicle Miles Traveled

SB 743 requires the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects. VMT per capita, VMT per employee, and net VMT are the new metrics for residential, office, and retail land use, respectively. The CEQA Guidelines state that lead agencies, such as Merced County, may establish "thresholds of significance" to assist with the determination of significant impacts of a project. The CEQA Guidelines generally state that projects that decrease VMT can be assumed to have a less than significant transportation impact. The CEQA Guidelines do not provide any

specific criteria on how to determine what level of project VMT would be considered a significant impact. More information about criteria used for determining the significance of VMT impacts is provided in section 10.3, Thresholds of Significance.

The transportation analysis utilizes the Merced County Association of Government (MCAG) Year 2035 Travel Demand Forecasting Model as a basis for evaluating existing VMT conditions and postproject VMT conditions. The model is the best available tool for estimating the VMT associated with various land uses in Merced County, and has been used for VMT analysis for other community plan projects in the county. The model's inventory of land uses includes both residential and non-residential uses within an area that covers Merced County and extends north and west into Stanislaus County beyond Turlock and west to Patterson. As a result, the model produces VMT estimates that include travel in Winton and in the balance of Merced County as well as travel in areas outside of the Merced County boundary.

Based on the analysis criteria and threshold of significance used for this analysis, VMT generated by existing development in the county was evaluated using the MCAG travel demand forecasting model. Countywide VMT without the project was modeled at 9,336,315.

Bicycle, Pedestrian and Transit Facilities

Unmaintained sidewalks exist on Shanks Road along the project site frontage, but there are no pedestrian facilities along the project site frontages with Bradbury Road or Vincent Road. There are no bicycle facilities on any of the adjacent roads and none in the immediate vicinity of the project site.

The Turlock Commuter passes through the State Route 99/Shanks Road interchange, but the nearest regular transit stop is at Stephens Street/Acacia Street, approximately 0.7 miles from the Shanks Road/Vincent Road intersection.

10.2 Regulatory Setting

This section includes summaries of standards, regulations, and plans that have been adopted or revised by local, regional, state, or federal agencies that bear on the evaluation of environmental impacts of the proposed project.

State

California Senate Bill 743

Historically, transportation analyses for development projects being evaluated under CEQA have utilized vehicle delay and congestion on the roadway system as the primary metric for identifying traffic impacts. However, the State of California has recognized the limitations of measuring and mitigating only vehicle delay at intersections and in 2013 passed Senate Bill (SB) 743, which requires jurisdictions to end the practice of using congestion and delay metrics, such as level of service, as the metric for evaluating impacts of new development in Transit Priority Areas.

SB 743 also directed the California Office of Planning and Research to establish new criteria for determining the significance of transportation impacts that "promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses." The Office of Planning and Research has updated the CEQA Guidelines for this purpose by adding a new section 15064.3 to the Guidelines. Beginning July 1, 2020, the provisions of SB 743 apply statewide to all projects, even those outside of Transit Priority Areas. VMT is generally defined as the total miles of travel by personal motorized vehicles a project is expected to generate in a day.

In response to revising the CEQA Guidelines pursuant to SB 743, the Office of Planning and Research issued the Technical Advisory on Evaluating Transportation Impacts in CEQA ("technical advisory"), which provides guidance on how agencies can evaluate VMT in CEQA documents. While the advisory provides guidance on evaluating operational VMT impacts and recommends thresholds of significance, it is silent on thresholds for construction impacts, as SB 743 does not address construction VMT impacts.

Local

Merced County General Plan

To date, the County has not adopted its own VMT policy. The County has, and continues to rely on the VMT guidance provided by the Office of Planning and Research as described above and further referenced in the Thresholds of Significance section below. The general plan includes a multitude of policies that while not specifically directed at reducing VMT, would have the direct and/or indirect effect of doing so. Due to their number, they are not listed in their entirety here. However, the congestion management policies found in the Air Quality Element of the general plan do specifically address VMT and are as follows:

Policy AQ-4.1 - Decrease Vehicle Miles Traveled - Require diverse, higherdensity land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled.

Policy AQ-4.3 - Public Transport Use Incentives - Prepare incentives and programs to encourage use of public transit and decrease vehicle miles traveled.

Policy AQ-4.4 - Transportation Alternatives (JP) - Require employers and developers to provide employees and residents with attractive, affordable transportation alternatives, such as transit stops, van pool pick-up and drop-off locations, and biking paths/storage.

Policy CIR-1.7 - Alternative Transportation Modes - Require development projects that have the potential to reduce existing level of service to plan for and accommodate alternatives modes of transportation (i.e., bicycle, pedestrian, transit).

Policy CIR-4.1 - Bicycle and Pedestrian System - Encourage a complete, safe, and interconnected bicycle and pedestrian circulation system that serves both commuter and recreational travel, and provides access to major destinations

within and between Urban Communities and cities. Prioritize Class I bicycle paths and separate trails between communities as part of the MCAG Regional Bikeway Plan. To the extent possible, use railroad and canal as right-of-way instead of streets to promote safety.

Policy CIR-4.2 - Bicycle Lanes and Pedestrian Paths - Require all new or major reconstructed streets within Urban Communities to accommodate travel by pedestrians and bicyclists, except where pedestrians and bicyclists are prohibited by law from using a given facility or where the costs of including bikeways and walkways would be excessively disproportionate to the need or probable use.

Policy CIR-4.5 - Bicycle Storage Facilities - Require the installation of bicycle storage facilities at major transportation terminals and commercial and employment centers.

Policy CIR-4.8 - Bicycle and Pedestrian Amenities - Encourage the installation of amenities that serve bicyclists and pedestrians, such as secure and convenient bicycle parking, water fountains, and shaded seating areas at public facilities.

Policy CIR-4.10 - Bicyclist Amenities - Require non-residential developments to provide amenities for bicyclists, including bicycle racks, showers, and changing facilities.

Delhi Community Plan

Like the general plan, the community plan does not directly address VMT. However, it does include a number of policies that would have the direct and/or indirect effect of reducing VMT. Representative policies are as follows:

Implementation Measure CI 1.1.k - Design of local streets should employ traffic calming devices, such as chokers, "bulb outs", medians, etc., where necessary to manage traffic speeds and create a more pedestrian friendly environment.

Implementation Measure CI 1.1.1 - Neighborhoods should be designed to interconnect with surrounding neighborhoods. This may be accomplished through the use of a grid or modified grid network or the use of interconnected cul-de-sacs. Dead end cul-de-sacs that do not provide for pedestrian movement are strongly discouraged except where necessary to provide for the development of odd shaped parcels.

Implementation Measure CI 1.1.n - Subdivisions shall be designed to maximize connectivity between adjacent land/parcels designated for an urban use.

Policy CI 3.1 - Establish a pedestrian and bicycle friendly environment that includes both on- and off-street pedestrian and bicycle facilities to encourage non-vehicular travel in the Community.

Implementation Measure CI 3.1.d - Class I separated bike paths shall be established along or adjacent to Turlock Irrigation District Lateral #6, and along Bradbury Road, Vincent Road, Flower Street and Swanson Road.

Implementation Measure CI 3.1.e - Class II bike lanes shall be provided along all major and minor collectors, except for those planned to have Class I bicycle lanes as indicated in CI 3.1.d.

Policy CI 4.1 - Integrate a multi-purpose bicycle/pedestrian trail system within the Community's Circulation system.

Policy: CI 5.1 - Development adjacent to minor and major collectors shall coordinate with Merced County Transit to identify appropriate locations for public transit improvements (i.e., bus pullouts, seating shelters) to encourage public transit use.

Implementation Measure CI 5.1.a - Public transit stops shall be provided throughout Delhi as recommended by the County Transit Authority to ensure residents are within the proximity of a public transit stop.

2022 Regional Transportation Plan and Sustainable Communities Strategy for Merced County

The Regional Transportation Plan and Sustainable Communities Strategy for Merced County (Merced County Association of Governments 2022) (RTP/SCS) contains the County's strategy for ensuring that the County transportation system will continue to operate efficiently in the future with sufficient capacity to meet demand and that mobility options are available. The RTP component of the plan focuses on regional transportation infrastructure needs. The SCS components of the plan address planned growth patterns that have been defined by local cities and the County to help reduce vehicle miles traveled consistent with California Senate Bill 375, the Sustainable Communities and Climate Protection Act, which is intended to reduce transportation related greenhouse gas emissions.

The RTP/SCS identifies a range of transportation infrastructure projects and programs to be implemented over time to support transportation efficiency and accommodate planned growth. Improvement projects and programs range from road capacity improvements to bicycle, transit, rail, and complete streets projects. The RTP/SCS includes one program that affects transportation in Delhi - expanded microtransit service.

Merced County Regional Bicycle Plan

The *Merced County Regional Bicycle Transportation Plan* (Merced County Association of Governments 2008) is a comprehensive long-range view for the development of an extensive regional bikeway network that connects cities and unincorporated areas countywide. The plan is designed to reduce single-occupant vehicle travel and to significantly increase bicycle commuting, thereby, reducing reliance on vehicle travel.

The bicycle plan shows proposed bicycle improvements for cities within the county and for unincorporated areas. For Delhi, these include a Class I bike lane that extends from Bradbury Road at the Turlock Irrigation District canal, through the site to Vincent Road at North Street, and Class II bike lanes along the project site frontages on Bradbury Road and Vincent Road.

10.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of transportation, as it does on a whole series of additional environmental topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of transportation impacts, or indeed on any subject addressed in the checklist. Rather, with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The County has done so here. Therefore, for purposes of this EIR, a significant impact would occur if implementation of the proposed project would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, bicycle and pedestrian facilities; or
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

VMT Threshold of Significance Approach

CEQA Guidelines section 15064.3, subdivision (b) includes guidance for analyzing the transportation impacts of land use projects. The guidance notes that VMT exceeding an applicable threshold of significance may indicate a significant impact. The County has elected to utilize guidance provided in the Office of Planning and Research technical advisory as a basis for evaluating VMT impacts. That guidance information about project types and sizes and locations where VMT impacts may be assumed to be less than significant. It also includes recommended thresholds of significance for various land use types and for projects containing a mix of use types. The OPR guidance used to assess significant of project VMT impacts for the proposed project is further described in the analysis of VMT impacts in Section 10.3 below.

10.4 Analysis, Impacts, and Mitigation Measures Conflicts with Transit, Bicycle and Pedestrian Facility Plans, Ordinances, or Polices

The proposed project could result in environmental impacts if it were deemed to conflict with transit, bicycle and/or pedestrian facility plans, ordinances or policies and the mitigation to rectify the conflict would result in physical environmental changes with potential to create adverse impacts.

Applicable Plans and Policies

Bicycle, pedestrian and transit policies that apply to future development within the project site are listed in the Regulatory Setting section above. The polices and their implementation measures clearly indicate that new development within the project site must provide an integrated network of such
facilities, and in the case of bicycle facilities, a regional Class I trail and Class II bicycle paths. The policies are intended to promote bicycle and pedestrian connectivity both within the project site and to adjacent developed areas. Transit policy from the community plan also clearly identifies the need to construct transit improvements commensurate with demand created by the proposed project.

Project Design Consistency

As described and illustrated in Section 4.0, Project Description, the proposed land use design and circulation design show that bicycle facilities are planned that are consistent with general plan, community plan, and reginal bicycle plan policies and projects. Class I and II bicycle facilities would be constructed for internal project connectivity and to connect the site to adjacent properties located within the community plan boundary. Consistency with other bicycle and pedestrian network policies and implementation measures would be ascertained at the future tentative map stage when detailed internal street and pedestrian and bicycle network design is conducted.

While no transit facility improvements are yet identified, the process to identify their types and locations would also logically be part of the planning process for future individual tentative maps proposed within the project site. It is assumed that given the projected 3,500-person population increase that would result at project buildout, transit demand will be sufficient to warrant installing transit facilities at the site that are readily accessible to future residents. For each proposed future tentative map, the County will require evidence that individual developers have consulted with The Bus, the County's regional transit provider, and that transit facilities are incorporated into tentative maps consistent with design specifications of the transit provider.

Constructing bicycle, pedestrian, and transit improvements within the project site will result in a range of environmental effects related to air quality, agricultural land, biological resources, cultural resources, greenhouse gases, hydrology and water quality, and noise. These effects would be part of the overall effects of constructing all development within the project site as identified in discussions of these individual environmental topics found either in the body of this SEIR and/or in the initial study checklist included in Appendix A.

The proposed project would not conflict with bicycle, pedestrian, or transit plans or policies.

Vehicle Miles Traveled

IMPACT
10-1Conflict with CEQA Guidelines Section 15064.3 by Exceeding the
Applicable Threshold for VMTLess than Significant

As described in the Regulatory Setting section above, SB 743, which requires that VMT impacts be evaluated in CEQA documents starting July 1, 2020, was not in effect when the community plan EIR was certified in 2006. Therefore, the topic of VMT is not addressed in the community plan EIR. This discussion summarizes the result of the VMT analysis for the proposed project.

VMT Criteria/Threshold Approach

The OPR Technical Advisory provides direction regarding the methods to be employed and significance criteria to evaluate VMT impacts. Information from the Technical Advisory is referenced here given its effect on the VMT analysis methodology utilized for this SEIR.

Local-Serving Retail Screening Criteria

The OPR Technical Advisory includes screening criteria that if met by a land use project, would render the project VMT impact to be less than significant. One such criterion is that local-serving retail uses with less than 50,000 square feet of building area can be assumed to have a less-than-significant VMT impact. Local-serving retail can reduce travel by offering customers more choices in closer proximity than current destinations. Conversely, OPR describes that regional-serving retail development can lead to substitution of longer trips for shorter ones, and may tend to have a significant VMT impact.

The OPR guidance also states that cities and counties often have their own definitions of local serving and regional-serving retail and that lead agencies may refer to those local definitions. Per the community plan land use descriptions, the portion of the project site designated Neighborhood Commercial is intended to support local-serving retail development. The Neighborhood Commercial land use description in the community plan (community plan, p. 3-6) is as follows:

The Neighborhood Commercial (NC) designation is intended for neighborhood retail and service uses such as a supermarket, pharmacy, bakery, dry cleaner, barber / beauty shop, video store, restaurant, business and professional offices, and other uses that generally serve nearby residential areas and carry products or offer services used by households on a regular basis.

The local-serving retail intent of the Neighborhood Commercial designation is further reinforced when compared to the General Commercial land use designation description in the community plan (community plan, p. 6) which reads:

The General Commercial (GC) designation is intended for community-wide and regional retail services. Along with providing services to the consumer, retail uses are a major source of sales tax revenue that support public services and infrastructure. General Commercial areas allow for retail and service such as restaurants, durable goods, specialty shops, food and drug stores and similar uses that serve a community-wide or regional market.

The General Commercial land use designation is clearly intended to support regional retail uses. This is further demonstrated by the fact that the only sites designated General Commercial in the community plan are large and located at U.S Highway 99 interchanges in Delhi to ensure they are as regionally accessible as possible. The community plan further describes the intent of the designation at these locations to facilitate regional-serving retail/commercial uses.

In the community plan/project context, the OPR guidance that local-serving retail uses of 50,000 square feet or less is not considered applicable given the information above. The proposed Neighborhood Commercial use, which is local serving, but greater than 50,000 feet is presumed nevertheless to reduce VMT and have a less-than significant VMT impact. Therefore, its contribution to overall project VMT requires no further analysis.

School Use Related VMT

Like the proposed Neighborhood Commercial use, the school facility included in the project will serve local Delhi residents, including the more than 3,500 new residents that would reside within the project site. New schools would typically reduce travel distance between homes and schools. As a result, they are analogous to locally serving non-residential uses and are presumed to have the effect of reducing total VMT. Therefore, their VMT impacts may be presumed to be less than significant and their contribution to overall project VMT requires no further analysis.

VMT Impacts Based on Residential Uses and Threshold of Significance

Consistent with OPR guidelines, this VMT analysis considers the VMT characteristics of the proposed uses that cannot be screened out from further analysis. As described above, the proposed neighborhood commercial and school uses can be screened out from further analysis. This leaves the proposed residential uses as the primary remaining land use for which VMT impacts must be evaluated. The validity of focusing on residential use VMT impacts is further enforced by OPR guidance which suggests that for projects that include a mix of uses, the analysis of VMT impacts may be based on the dominant land use; residential is the dominant project land use.

OPR recommends using a threshold of significance of 15 percent below baseline VMT per capita for residential projects. Residential projects whose VMT is up to 15 percent below the baseline VMT/capita would be presumed to have a significant impact.

The MCAG travel demand model was used to estimate baseline regional VMT and project VMT. The model has limited utility for isolating out VMT/capita for residential uses. Consequently, previous VMT analyses for projects in the county have evaluated changes in VMT from land use projects based on VMT per "service population". For this analysis, the baseline service population is the combination of the estimated population and number of employees in the region covered by the MCAG model. Total VMT for the region is then divided by the service population within the same region to arrive at a baseline VMT/service population metric that is used as the threshold of significance for the proposed project. Countywide service population is calculated based on the existing and projected number of households multiplied by 3.2 persons per household as referenced on page 25 of the transportation analysis. The number of regional employees was calculated based on the existing and future square footage for non-residential uses multiplied by occupancy factors from the Merced County General Plan.

In the proposed project context, the service population threshold is analogous to a VMT/per capita metric because the service population for the project is comprised solely of population generated by the planned residential use. Consequently, the threshold of significance used here is 15 percent below the baseline regional VMT/service population.

VMT Impact

Table 10-1, Vehicle Miles Traveled Summary, shows the countywide baseline VMT derived from the MCAG model, the countywide baseline service population and the resulting countywide VMT/service population. For the proposed project, residential VMT and the associated project service population (residential population only) are shown. A comparison of the baseline to project VMT/service population shows that project VMT would be approximately 17.98 percent below the baseline VMT. Because the project VMT is more than 15 percent below the baseline reginal VMT, the VMT impact is less than significant.

	Baseline VMT/Service Population	Project VMT/Service Population	Project VMT Reduction from Baseline VMT
VMT	9,336,315	47,363	
Service Population	663,576	4,104	17.98 Percent
VMT/Service Population	14.07	11.54	
	0		

Table 10-1 Vehicle Miles Traveled Summary

It should be noted that the regional VMT modeling does not take into account those elements of the proposed project that would reduce vehicle trip number and/or length. These features include providing Class 1 bike paths and Class II bike lanes, sidewalks, and transit facilities to the extent requested by the transit provider. These improvements would enable project residents to use alternative modes of transportation to access locations within site, vicinity and potentially the region. Consequently, the VMT/service population for the project would be lower than the 11.54 shown in Table 8; the analysis is considered to be conservative.

Circulation Hazards and Emergency Access

IMPACT 10-2	Substantially Increase Circulation Hazards and/or Result in Inadequate Emergency Access	Less than Significant	
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As described in Section 4.0, Project Description, the proposed project includes plans for and describes the locations and characteristics of proposed vehicle, bicycle, and pedestrian circulation features and improvements at a plan level. Roadway cross-sections are provided that illustrate representative vehicular and bicycle and pedestrian improvements.

All transportation improvements must be consistent with County specifications, which are based on standard engineering practice for safe and efficient facility design. This includes specifications for emergency vehicle access, sight distance, vehicle speed, turning radii, etc. Each future tentative map will be reviewed by the Merced County Department of Public Works, Fire and Police departments to ensure that circulation improvements are designed consistent with their respective standards for safe movement of vehicles, pedestrians, bicyclists and emergency vehicles.

Circulations hazards for all modes of transportation could occur with future development of the project site if circulation improvements are not designed specifically to anticipate and avoid or substantially reduce potential for such hazards, or to ensure access for emergency vehicles. Hazards would be avoided and adequate emergency access would be assured through the County's future individual project design review process, with a particular emphasis on review of each future tentative map or other discretionary approval for consistency with circulation improvement specifications and safety criteria. Given this fact, impacts from circulation hazards and/or inadequate emergency access would be less than significant.

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11.0 Utilities

This section of the SEIR assesses the need to construct new or expanded wastewater conveyance and wastewater treatment facilities; construct new storm water conveyance and disposal facilities; and construct natural gas, electricity and/or telecommunications facilities needed to serve the project. The need for and effects of constructing new water supply infrastructure are addressed in Section 8.0, Water Supply. Issues related to solid waste management are addressed in the initial study checklist included in Appendix A.

Information in this section is derived primarily from the *Draft Environmental Impact Report for the Delhi Community Plan EIR* (Merced County 2005) and the *Delhi Water and Sewer Systems Memo* (QK Inc. 2022) ("water and sewer memo") included in as part of the WSA found in Appendix D.

Responses to the Notice of Preparation

There were no responses to the NOP regarding hydrology and water quality.

11.1 Wastewater and Stormwater Setting

Existing Wastewater Treatment and Collection Conditions Wastewater Treatment

As described in the water and sewer memo, wastewater conveyance and treatment services are supplied to the Delhi community by the Delhi County Water District (DCWD). Treatment services are provided at the Delhi wastewater treatment plant. The wastewater treatment plant has a permitted capacity of 1.0 million gallons per day (mgd) provided additional effluent disposal capacity is provided. There are two existing percolation ponds left over from the original plant construction that are not in use that would satisfy the requirement needed to increase capacity to 1.0 mgd if the infrastructure were installed to divert water into these ponds. The plant has current capacity to treat up to approximately 0.8 mgd per day. Flow into the plant is approximately 0.61 mgd.

The plant consists of an Advanced Integrated Wastewater Pond System that includes a headworks, advanced facultative ponds, high-rate ponds, algal settling ponds, a maturation pond, and evaporation/percolation ponds.

Wastewater Collection

There are no wastewater collection mains available to serve the project site. The community plan describes the needed for DCWD's existing collection system to be expanded to meet the needs of new development, and includes preliminary collection system improvement plans for this purpose. The need for new collection mains in Bradbury Road and Vincent Road along the project site frontages is identified, primarily to serve new development within the project boundary and to the help create an overall looped system.

The water and sewer memo includes a statement that the DCWD has determined that the mains along the project site frontages identified in the community plan are sufficient to accommodate the proposed project.

DCWD's current collection system does extend to the project site. The nearest connection point is located in 6th Street, approximately one mile to the south of the project site.

Existing Stormwater Collection and Disposal Conditions

There are no known improved stormwater collection or disposal infrastructure improvements within or adjacent to the project site; unimproved agricultural drainage features do exist within the site.

11.2 Regulatory Setting

State

The State Water Resources Control Board, in coordination with nine Regional Water Quality Control Boards (RWQCB), performs functions related to water quality, including issuance of wastewater discharge permits and waste discharge requirements and other programs on stormwater runoff, and underground and above ground storage tanks.

Wastewater treatment discharge requirements are promulgated by the State Water Resources Control Board and implemented by the RWQCBs. The County and the Delhi community are within the jurisdictional boundary of the Central Valley Regional Board. Such regulations are based on Basin Plans adopted by the Regional Boards that identify water quality goals and beneficial uses of surface water. They enforce State waste discharge requirements and, as appropriate, National Pollutant Discharge Elimination System permits.

Local

Delhi County Water District

As previously described, the DCWD provides water supply and wastewater collection and treatment services to the Delhi community. The DCWD operates a system of wastewater conveyance mains that deliver wastewater to its wastewater treatment plant, located on Pinewood Street. The wastewater treatment plant operates under Central Valley Regional Water Quality Control Board Waste Discharge Requirements Order R5-2015-0053. The DCWD is authorized to require new development to fund improvements to its collection system and treatment plant that are needed to serve the development. The DCWD issues "can and will serve" letters to new development that demonstrate its ability to serve the development contingent on conditions related to improvement requirements and responsibilities of the development.

Merced County

Delhi Community Plan

Policy PS 1.1 - As development occurs ensure that adequate public services are provided.

Implementation Measure PS 1.1.a - Master plans and tentative subdivision maps shall identify the placement and sizing of necessary infrastructure (e.g., water, sewer, drainage) improvements.

Implementation Measure PS 1.1.c - New development project shall provide its proportionate share of the full range of urban level

Implementation Measure PS 1.1.d - Require preliminary "can and will serve" letter from the Delhi County Water District prior to processing a discretionary application (tentative map, conditional use application, or administrative application.

Policy PS 2.1 - Development shall finance public facilities if development impacts existing public services.

Implementation Measure PS 2.1.b - Require financing of infrastructure improvements to be the responsibility of development of vacant and undeveloped lands.

Merced County General Plan

Policy PFS-2.2: Wastewater Treatment and Disposal Capacity - Require applicants for discretionary projects located within special district boundaries to provide a "Can and Will Serve" letter or other documentation from the appropriate sewer and/or water district demonstrating the commitment of capacity prior to acceptance of the discretionary application as complete. Discretionary applications generally include: general plan amendments, zone changes, conditional use, location and development, tentative subdivision and administrative permit applications.

Policy PFS-2.3: Sewer and Water District Requirement - Require at the final map or building permit stage for permitted developments proof of approved service from a local sewer and/or water district or approval from the County Health Department for on-site systems outside districts outside urban special districts service boundaries. For discretionary applications, a "Can and Will Serve" letter from the local sewer and/or water district shall be required as part of the application materials. For discretionary applications outside a district, initial clearance for processing must be obtained from the County Health Department for projects utilizing on-site systems.

Merced County Ordinance No 1923

Ordinance No. 1923 includes standards for construction site storm water runoff controls (e.g., to minimize potential release of contaminants and minimize potential for soil erosion), and post-construction storm water management goals for new and redeveloped areas. The latter include best management practices for controlling and treating runoff from new impervious and other surfaces prior to discharge to a storm water system. These practices require, in part, that the volume and rate of runoff from a new development site under cannot exceed that which occurred from the subject development site under pre-development conditions. This requirement assures that runoff from new impervious surface would not increase the potential for flooding on- or off-site or exceed the capacity of storm drainage systems. New development must comply with the uniformly applied performance standards in the County's Storm Water Management Program.

11.3 Thresholds of Significance

CEQA Guidelines Appendix G is a sample initial study checklist that includes a number of factual inquiries related to the subject of wastewater and storm drainage facilities, as it does on a whole series of additional environmental topics. Lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance on the subject of constructing new or expanded wastewater and stormwater facilities, or indeed on any subject addressed in the checklist. Rather, with few exceptions, CEQA grants agencies discretion to develop their own thresholds of significance. Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. The County has done so here. Therefore, for purposes of this SEIR, a significant impact would occur if implementation of the proposed project would:

- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments, leading to relocation or construction of new or expanded wastewater treatment and/or conveyance facilities, the construction of which could cause significant environmental effects;
- Require or result in the relocation or construction of new or expanded storm water drainage facilities, the construction of which could cause significant environmental effects; or
- Require or result in the relocation or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects.

11.4 Analysis, Impacts and Mitigation Measures

This section includes information and data regarding wastewater treatment plant and wastewater conveyance facility construction requirements and the potential for construction activities to result in significant environmental impacts. The need for and effects of constructing new stormwater collection and disposal facilities are also evaluated.

Wastewater Infrastructure Construction Impacts

Wastewater Treatment Plant Improvement Requirements

The water and sewer memo includes analysis of projected wastewater water flows from the proposed project and identifies the capacity of the treatment plant to accommodate the flows. The DCWD identified that an equivalent dwelling unit for the proposed project is estimated to generate 300 gallons per day. All proposed uses other than the elementary and middle schools were calculated as 1,077 equivalent dwelling units for a total of 337,650 gallons per day of wastewater generation. School wastewater generation was calculated at 27,500. Total for the project would be about 365,150 gallons per day.

With an existing treatment capacity of 0.80 mgd and an existing daily treatment volume of 0.61 mgd. The proposed project would add 0.365 mgd of daily flow, bringing the daily volume to 0.975 mgd. Consequently, additional capacity is needed to accommodate the project. The DCWD has identified that three improvements are needed to increase capacity to 1.0 mgd, thereby meeting the treatment capacity needs of the project: 1) improving an existing piping structure to allow flow to existing unused percolation ponds; 2) installing short segments of new piping from the structure to each of the two unused ponds, and paving an existing alga drying pad and installing a pipe drain from it to an existing treatment pond. Please refer back to Figure 4-11, Wastewater Treatment Plant Capacity Improvements, for the locations of these facility improvements.

All of the necessary improvements would be made within the boundary of the treatment plant in areas that are already disturbed and largely void of vegetation. The intensity of construction activities would be nominal; typical construction equipment would be used for a short duration of time. Consequently, construction noise, traffic, air quality, and GHG effects would be minimal. The nearest sensitive receptor is located approximately 500 feet to the east of the nearest construction site (alga drying pad paving). Biological resources and noise impacts of the improvements are identified in the respective sections of this SEIR. Other general effects of constructing new development planned per the community plan, including new infrastructure, are addressed in the initial study checklist in Appendix A.

The treatment plant capacity improvements would be a separate project under CEQA. The DCWD would act as the lead agency and prepare environmental documentation to assess potential impacts in detail once final specifications for the improvements are available. No further analysis is required.

Wastewater Conveyance Improvement Requirements

To tie the project site into the nearest existing wastewater conveyance system connection point, an approximately one-mile-long new main (consisting of 15-inch and 21-inch diameter pipes) must be extended south from the southern project site boundary on Vincent Road, in Vincent Road to 4th Street, in 4th Street to 6th Street, and south in 6th Street to its terminus at an existing lift station. The lift station will also require upgrades. Please refer back to Figure 4-10, Off-Site Wastewater Infrastructure Requirements, for the pipeline route.

The new main would be constructed within existing road rights-of-way likely within existing paved sections of the respective roads or in utility easements directly adjacent to the paved road sections. These areas are generally already significantly disturbed or developed. The intensity of construction activities would be nominal; typical construction equipment would be used for a short duration of time. Consequently, construction noise, traffic, air quality, and GHG effects would be minimal. Several noise and air emissions-sensitive receptors are located along the new pipeline route. Biological resources and noise impacts of constructing the improvements are identified at a general level in the respective sections of this SEIR. Other general effects of constructing new development planned per the community plan, including new infrastructure, are addressed in the initial study checklist in Appendix A.

Constructing the new pipeline would be a separate project under CEQA. The DCWD would act as the lead agency. This SEIR evaluates the effects of constructing and operating the pipeline based on the general, preliminary level of information available about its probable location and characteristics. The DCWD can use information in this SEIR to support its future independent evaluation of related impacts once final design/specification information for the improvement is available. No further analysis is required.

Storm Drainage Infrastructure Construction Impacts

As described in Section 4.0, Project Description, the proposed project includes on-site storm drainage infrastructure improvements. These generally consist of storm water detention ponds and the subsurface storm water conveyance piping system needed to convey storm water from impervious surfaces to the detention ponds. The detention ponds are proposed in part to ensure that future development within the site complies with post-construction water quality control requirements promulgated by the Central Valley Regional Water Quality Control Board with County implementation requirements identified in its Storm Water Management Program.

The environmental effects of constructing on-site storm water infrastructure would be similar to constructing other urban development planned for the site. These include potential air quality, cultural resource, biological resource GHG, water quality, and noise effects. Air quality, biological resource, GHG, hazards and hazardous materials, and noise effects of planned construction

activities are addressed in other sections of this SEIR. Cultural resource and water quality effects are addressed in the initial study checklist included in Appendix A. No further analysis is required.

Power, Natural Gas and Telecommunications

The proposed project would increase demand for electricity, natural gas and telecommunications services. While new development would require the extension or increased capacity of local electrical and gas facilities, such as connections to transmission lines, no major improvements or development of new supplies are known at the time. Electricity distribution lines are located along Vincent Road and Bradbury Road. PG&E will review development proposals as they are submitted to determine what, if any, project-specific improvements are needed.

New electric, natural gas and telephone/communications lines would likely be installed within utility trenches, which are typically within existing roadway rights-of-way where grading, paving and other urban development has already occurred. Consequently, constructing such improvements is likely to result in environmental effects that are similar to those identified for constructing other on- and off-site improvements identified in this SEIR and in the initial study checklist included in Appendix A.

Were substantial, previously unforeseen new infrastructure improvements identified by PG&E, such improvements would likely be subject to separate environmental review to assess impacts once detailed project specifications and improvement plans are known. No further analysis is required.

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12.0 Applicable Delhi Community Plan EIR Mitigation Measures

As described in the initial study checklist included in this EIR as Attachment A to the NOP in Appendix A, the community plan EIR identified that buildout of the community plan area, including the proposed project site, would have a range of significant environmental impacts and significant unavoidable impacts. Mitigation measures are included in that EIR to substantially lessen many of the significant impacts. The proposed project would contribute to many of the same significant and significant unavoidable impacts. Therefore, associated mitigation measures in the community plan EIR are applicable to the proposed project.

Table 12-1, Applicable Delhi Community Plan EIR Mitigation Measures, includes a list of the applicable community plan EIR mitigation measures, which are in the form of community plan policy and/or implementation measures. Where the community plan EIR identifies policy, policy implementation measures, and/or mitigation measures that serve as mitigation for impacts evaluated in detail in this SEIR (e.g., air quality, biological resources, noise, hydrology/water supply, utilities/wastewater, etc.), the associated measures are not referenced in Table 12-1, as this SEIR supplements and updates those community plan impact analysis and required mitigation for these environmental topics. The mitigation measures in this SEIR and the applicable community plan EIR mitigation measures in Table 12-1 will be included in the mitigation monitoring and reporting program for the proposed project. This will ensure the County's ability to comprehensively account for and track implementation of all mitigation measures that are applicable to individual future development projects proposed within the Bradbury Ranch Master Plan boundary.

Table 12-1 Applicable Delhi Community Plan EIR Mitigation Measures

Delhi Community Plan EIR/EIR Environmental Checklist Mitigation Measures

Agricultural Resources

OS 3.2.a Prior to the subdivision / development of a master plan area or the subdivision / development of vacant or underutilized land identified as Important Farmland, as defined by the California Department of Conservation, that is equal to or greater than 20 acres, the applicant shall place farmland of equal or higher quality into a permanent agriculture conservation easement at a ratio of one (1) acre of agriculture conservation easement for every acre of Important Farmland subdivided / developed.

In the event the County of Merced adopts an agriculture impact mitigation program / ordinance that defines the method(s) by which the loss of Important Farmland shall be mitigated (e.g., in-lieu fee, agriculture conservation easement replacement ratio criteria, timing of dedication, etc.), projects which meet the agriculture impact mitigation program / ordinance criteria will be subject to the requirements of the program / ordinance.

Cultural Resources

OS 5.1.c Prior to completion of an historic resource inventory, master plans and projects that may involve the remodeling (other than routine maintenance) or demolition of buildings or structures 45 years or older prior to the County of Merced undertaking an inventory of historic resources in the Delhi Community Plan Area shall be evaluated by a qualified professional for historic significance and recommendations prior to approval.

OS 5.2.b Master Plans and projects one (1) acre or greater requiring grading or excavation shall prepare an archaeological survey, including testing, if recommended by a qualified archaeologist, prior to approval. Areas that are found to contain or be likely to contain archaeological resources shall be fully surveyed, including excavation to the extent needed, to characterize and record the archaeological site. If a sensitive site cannot be fully surveyed prior to construction (due to the presence of pavement or other reasons), a qualified archaeologist shall be present to monitor all grading and excavation activity. Any artifacts that are uncovered shall be recorded and preserved in situ or donated to an appropriate organization or archive.

OS 5.2.c If human remains are discovered, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to their origin and disposition pursuant to Public Resource code Section 5097.98. If the Corner determines that no investigation of the cause of death is required and if the remains are of Native American origin, the Coroner will notify the Native American Heritage Commission, which in turn will inform a most likely descendent. The descendent will then recommended to the landowner appropriate disposition of the remains and any grave goods.

SOURCE: Delhi Community Plan EIR

13.0 Growth-Inducing Impacts

13.1 CEQA Requirements

CEQA Guidelines section 15126.2 states that an EIR shall discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

13.2 Impact Analysis

Urban development of the project site has been envisioned by the County at least since the community plan was adopted in 2005. This is reflected in the fact that the project site is included in the community plan boundary, conceptually planned for development with a variety of urban uses, and that the programmatic impacts of developing the site are evaluated in the community plan EIR.

The proposed project is a master plan, a planning and implementation tool identified in the community plan as necessary to direct future development of the project site. The proposed project represents a modification of land use designations assigned to the site in the community plan, but nevertheless represents a plan for urban development on a site that has already been planned for urban development. Table 4-2, Community Plan/Proposed Master Plan Development Capacity Comparison, shows that the primary development capacity changes that would occur with the proposed project include:1) eliminating 50 acres of land designated for business park and the associated 457,380 square feet of associated business park building capacity; and 2) increasing residential development capacity by about 293 dwelling units.

In significant part, it is these two major and other less substantial changes in land use and development capacity that give rise to several potential environmental impacts of the proposed project that are analyzed in this SEIR. Consequently, this SEIR evaluates the growth-inducing impacts of the proposed project relative to growth impacts from developing the site with land uses in the community plan as already evaluated in the community plan EIR.

The proposed project would not have potential to foster growth outside of the project site boundary that is not already anticipated in the community plan and community plan EIR. The proposed project would not relieve impediments to growth outside the community plan boundary, as the project would not extend or expand infrastructure or other services to provide capacity for new growth outside the project site boundary that is not already contemplated in the community plan and community plan EIR.

14.0 Cumulative Impacts

14.1 CEQA Requirements

CEQA Guidelines section 15130 requires a discussion of cumulative impacts when the project's incremental effect is cumulatively considerable, as defined in section 15065(a)(3), which states, "The project has possible environmental effects that are individually limited but cumulative considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." A cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the other identified projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

Sections 15130(d) and 15130(e) of the CEQA Guidelines are particularly relevant to evaluating cumulative effects of the proposed project. These sections state:

(d) Previously approved land use documents, including, but not limited to, general plans, specific plans, regional transportation plans, plans for the reduction of greenhouse gas emissions, and local coastal plans may be used in cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference pursuant to the provisions for tiering and program EIRs. No further cumulative impacts analysis is required when a project is consistent with a general, specific, master or comparable programmatic plan where the lead agency determines that the regional or areawide cumulative impacts of the proposed project have already been adequately addressed, as defined in section 15152(f), in a certified EIR for that plan.

(e) If a cumulative impact was adequately addressed in a prior EIR for a community plan, zoning action, or general plan, and the project is consistent with that plan or action, then an EIR for such a project should not further analyze that cumulative impact, as provided in Section 15183(j).

14.2 Cumulative Development Scenario

CEQA requires a cumulative development scenario to consist of either 1) a "list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency" or 2) a "summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program.

Geographic Scope

The geographic scope of the area affected by cumulative impacts can vary with the specific environmental topic being evaluated. Generally, the geographic boundary for evaluating cumulative projects impacts is larger than the boundary of the project site itself. For the analysis of cumulative impacts of environmental topics evaluated in this SEIR, the geographic boundary ranges from the community plan boundary to the state as summarized in Table 14-1, Cumulative Impact Analysis Geographic Scope.

Cumulative Impact Geographic Scope		
San Joaquin Valley Air Basin		
Central Merced County Region		
State of California		
Turlock Groundwater Subbasin		
Merced County (Traffic Noise) and Delhi Community Plan Buildout (Other Noise Issues)		
Merced County (VMT) and Delhi Community Plan (Alternative Transportation)		
Delhi County Water District Boundary		

Table 14-1	Cumulative Impact	t Analysis	Geographic Scope
		-	

SOURCE: EMC Planning Group 2022

Plan Projections and Projects Contributing to Cumulative Development Conditions

As noted above, for a number of environmental topics, the geographic scope of the area affected by a cumulative effect is the Delhi Community Plan. The cumulative development scenario for the community plan area consists of buildout projections contained in the community plan, which include 5,592 new dwelling units, 221,535 square feet of new industrial buildings, 2,670,173 square feet of new commercial buildings, 426,991 square feet of mixed-use buildings, and a population of 20,444 people. The proposed project accounts for nearly 20 percent of the residential use, five percent of the commercial use, and 17 percent of the population assumed for buildout of the community plan area. There are no known or reasonably foreseeable major projects presently in the Merced County entitlement process for areas in the immediate vicinity of Delhi.

Cumulative development projections for other environmental topics vary by topic and are addressed in individual topic analyses in this SEIR and/or described below in the cumulative impact analysis for those topics.

14.3 Cumulative Impacts

The methodology for addressing each cumulative impact topic is to: 1) identify the geographic boundary or scope for the environmental topic; 2) determine whether past projects, other current projects, and probable future projects (including the proposed project), have or will likely combine to create a significant cumulative environmental impact based on information contained in the general plan EIR, or based on other pertinent information for the geographic scope of the cumulative effect; and, if so, 3) evaluate the incremental contribution of the proposed project to the cumulative effect and determine whether that contribution is considerable and therefore, significant.

Cumulative Effects Adequately Addressed in the Community Plan EIR

As described in Section 1.2, Type and EIR and SEIR Scope, the scope of analysis in this SEIR has been defined based on the need to supplement the community plan EIR with analysis that is sufficient to assess the environmental impacts of the proposed Bradbury Ranch master plan project. An initial study checklist using guidance provided in Appendix G of the CEQA Guidelines was prepared to identify the scope of analysis included in this SEIR. The checklist identifies environmental topics for which the analysis in the community plan EIR is sufficient to address the environmental impacts of the proposed project, environmental topics in the community plan EIR whose analysis must be supplemented to sufficiently assess impacts of the proposed project, and new environmental topics now identified in Appendix G for which no analysis was included in the supplemental EI, but are addressed in this SEIR. The scope of the cumulative impact analysis herein is limited to environmental topics addressed in this SEIR, which include air quality, biological resources, GHGs, hydrology and water supply, noise, transportation, and utilities (wastewater and storm water). The cumulative analysis in the community plan EIR is sufficient to address cumulative impacts of environmental topics found in the initial study checklist to be sufficiently evaluated in that EIR. The initial study checklist is included in Appendix A of this SEIR.

Air Quality

Proposed Project Impact Summary

Air quality impacts are discussed in Section 5, Air Quality. The proposed project would result in the following significant air quality impacts:

- Impact 5-1. Conflict with the Air Quality Plan (Less than Significant with Mitigation);
- Impact 5-2. Criteria Air Pollutant (including Fugitive Dust) Emissions During Construction that Exceed the Air District Thresholds and Degrade Air Quality (Less than Significant with Mitigation);
- Impact 5-3. Criteria Air Pollutants During Operations that Exceed Air District Thresholds and Degrade Air Quality (Less than Significant with Mitigation);
- Impact 5-4. Expose Sensitive Receptors to Toxic Air Contaminants Generated by Construction Activity (Less than Significant with Mitigation); and
- Impact 5-6. Expose New On-Site Sensitive Receptors to New and Existing Sources of Toxic Air Contaminants (Less than Significant with Mitigation).

Geographic Scope

The geographic scope for criteria air emissions impacts of the proposed project is the boundary of the San Joaquin Valley Air Basin (air basin), which encompasses San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare counties, and the San Joaquin Valley Air Basin portion of Kern County. This is the area for which the San Joaquin Valley Air Pollution Control District (air district) has prepared plans for reducing specific types of air emissions and otherwise manages air quality to meet federal and state air quality standards.

Cumulative Impacts

Past and present projects within the air basin have generated criteria air emissions through construction and operational activities. The air basin is currently in state non-attainment for ozone and particulate matter (PM). That is, past and present projects have generated these emission types to the extent that their concentration within the air basin exceeds applicable state standards for ozone precursors and PM. The air district has prepared the *2018* PM_{2.5} Plan for the San Joaquin Valley (2018 PM_{2.5} Plan) and various rules and regulations to implement the 2018 PM_{2.5} Plan and address cumulative ozone and PM emissions from past, present, and future projected development to below the standards.

Although the effect has been diminishing in recent years with cleaner fuel and engine technologies, cumulative development, including the proposed project if approved, also has potential to result in increased toxic air contaminant (TAC) missions during construction and operations. Exposures to TACs can result in increased health risks for sensitive receptors. Construction and operational TAC emissions can adversely affect adjacent sensitive receptors, but due to the localized effects of both construction and operational TAC emissions sources, it is unlikely that they would combine in a cumulative context to adversely affect the same population of sensitive receptors, and are considered less than cumulatively significant.

Project Contribution to Cumulative Impacts

The proposed project would generate ozone precursors and PM emissions during construction and operations for which the air basin is in nonattainment, and would contribute to cumulative air quality impacts. Project-related ozone and PM_{10} emissions exceed air district thresholds and would be cumulatively considerable. The air district considers a cumulative contribution of the ozone precursor NO_x , and PM_{10} and $PM_{2.5}$ emissions to be less than cumulatively considerable if individual projects implement measures in compliance with Regulation VIII and Rule 9510 (discussed in Section 5) to reduce production of NO_x and PM emissions during construction and operations, respectively. Mitigation measures AQ-1 - AQ-3 reduce the project's contribution by requiring implementation of emissions reduction measures in compliance with air district Regulation VIII and Rule 9510.

Conclusion

With implementation of mitigation measures AQ-1 - AQ-3, the proposed project contribution to cumulative air quality impacts would be reduced to less than cumulatively considerable with mitigation and no additional mitigation would be required.

Biological Resources

Proposed Project Impact Summary

The biological resource impacts of the project are discussed in Section 6.0, Biological Resources. The proposed project would result in the following significant biological resource impacts:

- Impact 6-2. Potential Effect on Candidate, Sensitive, or Special-Status Species (American Badger) (Less than Significant with Mitigation);
- Impact 6-3. Potential Effect on Candidate, Sensitive, or Special-Status Species (San Joaquin Kit Fox) (Less than Significant with Mitigation);
- Impact 6-4. Potential Effect on Candidate, Sensitive, or Special-Status Species (Bat species) (Less than Significant with Mitigation);
- Impact 6-5. Potential Effect on Candidate, Sensitive, or Special-Status Species (Coast Horned Lizard and Northern California Legless Lizard) (Less than Significant with Mitigation);

- Impact 6-6. Potential Effect on Candidate, Sensitive, or Special-Status Species (Burrowing Owl) (Less than Significant with Mitigation);
- Impact 6-7. Potential Effect on Candidate, Sensitive, or Special-Status Species (Swainson's Hawk) (Less than Significant with Mitigation); and
- Impact 6-8. Potential Effect Nesting Migratory Birds (Including Loggerhead Shrike) and Raptors (Less than Significant with Mitigation).

Geographic Scope

The geographic distribution ranges for special-status species wildlife species vary greatly depending largely on environmental factors such as habitat suitability criteria (e.g., some species may only occur locally while others may range throughout large geographic areas such as the western U.S.). For the purposes of cumulative analysis for special status wildlife species and other biological resources, the geographic boundary for cumulative impacts is generally defined as the San Joaquin Valley region. An analysis at this level is considered adequate for determining whether impacts could affect the sustainability of special status species and their habitats. Within this area, regulatory agencies and conservation organizations including U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, and California Native Plant Society, work to establish and update critical distribution range information for species thought to be declining within their geographic ranges due to habitat loss and degradation.

Cumulative Impacts

Past and present projects in and around the Delhi community have permanently wildlife habitats to varying degrees. This development has reduced the range and number of multiple wildlife species and contributed to threats to their continued viability. The fact that federal and state agencies recognize numerous wildlife species with special status, which requires that the species be given specific consideration and protection, reflects the agencies' concern that the species are declining in number and range relative to their historic occurrences. Special-status species are generally considered rare, restricted in distribution, declining throughout their range, and/or to have a critical, vulnerable stage in their life cycle, that warrants their protection and monitoring. Such development has also constrained wildlife movement, and reduced nesting and foraging habitat for resident and migratory avian species. The impacts of past and present projects on special-status wildlife species are cumulatively significant. Future probable projects, including the proposed project if approved, would further exacerbate these impacts and worsen cumulative impacts.

Project Contribution to Cumulative Impacts

Potentially significant project impacts on special-status wildlife species would be reduced to less than significant with implementation of associated mitigation measures identified. The potential for the site to contain important wildlife corridors is minimal given that the project site has historically been

in agricultural use with little to no natural corridors. Movement is likely restricted to that of common wildlife species and these areas do not function as regional wildlife movement corridors or habitat linkages.

Given that the project site has been heavily disturbed by agricultural activities, that biological resources are limited, and the historical effectiveness of the proposed mitigation measures, impacts of the proposed project on biological resources are considered to be less than cumulatively considerable.

Greenhouse Gas Emissions Proposed Project Impact Summary

The GHG impacts of the project are discussed in Section 7.0, Greenhouse Gas Emissions. The proposed project would result in the following significant GHG impacts:

- Impact 10-1. Proposed Project Generates Greenhouse Gas Emissions That Have a Significant Impact on the Environment (Less than Significant with Mitigation); and
- Impact 10-2. Proposed Project Conflicts with the Applicable Plan to Reduce Greenhouse Gas Emissions (Less than Significant with Mitigation).

Geographic Scope

GHG emissions effects are not localized to areas where they are produced. Climate change is a global phenomenon resulting from the combined effects of GHG emissions produced worldwide. Consequently, the analysis of climate change impacts from production of GHGs as included in Section 7.0, Greenhouse Gases, is inherently cumulative in nature. While the true geographic scope of the area affected by GHG emissions is global, for purposes of this SEIR, the geographic scope is considered to be the state. This scope is selected because the broad array of state legislation and regulatory requirements for reducing GHGs includes direction for local agency actions needed to reduce GHGs for the purpose of helping to meet statewide GHG reduction goals.

Cumulative Impacts

Potential effects of global warming at the local, regional and state scale are described in Section 7.0 The cumulative impacts of global warming are significant given projections of a range of adverse social, economic, and environmental effects resulting therefrom. This is also true for the climate change setting within the state.

Project Contribution to Cumulative Impacts

GHGs produced by the project would exceed the thresholds of significance as described in Section 7.0. Therefore, the project contribution to cumulative GHG emissions impacts is cumulatively considerable and cumulatively significant. Mitigation measure 7-1 requires the applicant to prepare and implement a GHG reduction plan to reduce GHG emissions to below the threshold of

significance. The impact is less than significant with implementation of the mitigation. Therefore, the project would have a less than cumulatively considerable impact from generating GHG emissions.

Water Supply

The proposed project's hydrology water supply impacts are discussed in Section 8.0, Hydrology and Water Quality. The proposed project would have a less than significant impact regarding sufficiency of water supply availability and no impact regarding conflict with the applicable groundwater sustainability plan.

Geographic Scope

The geographic scope for cumulative water supply impacts is the Turlock Subbasin. The DCWD pumps water from the subbasin to supply potable water within its service area, in which the project site is located. The subbasin is the appropriate geographic scope because it represents a defined boundary for water supply management for the DCWD and the Turlock Subbasin Groundwater Sustainability Agency.

Cumulative Impacts

As described in Section 8.0, past and present development within the boundary of the subbasin, including agricultural water users and urban development within the DCWD boundary, has contributed to a decline in groundwater in storage.

The Turlock Subbasin Groundwater Sustainability Plan was adopted in 2022. It includes projections of future groundwater demand within the subbasin. For incorporated urban areas, future demand is based on the urban water management plans of water purveyors in those areas. Where water purveyors aren't required to prepare urban water management plans, including the DCWD, projected demand is based on general plan land uses (e.g., the land uses in the Delhi Community Plan). Future projects which increase groundwater demand relative to demand assumed in the Turlock Subbasin Groundwater Sustainability Plan could exacerbate groundwater declines in the subbasin. Cumulative impacts on the groundwater supply are considered significant due to the historic drop in groundwater in storage.

Project Contribution to Cumulative Impacts

Through a WSA prepared for the project, the DCWD has concurred that is has sufficient water supply reliability to serve the project provided that specific water supply system improvements are made. These include constructing new off-site water mains, and two new wells or a new well combined with new storage. The applicant will be responsible for funding these improvements. Two new well sites have been reserved. The impacts of constructing these improvements are addressed in this SEIR. The groundwater impact of urban development within the community plan boundary, including groundwater demand from development of the project site per its existing community plan land use designations, was already identified as significant and unavoidable in the community plan EIR. As noted above, the cumulative community plan demand is already accounted for in the groundwater sustainability plan. As shown in Table 8-2, Change in Water Demand with the Proposed Project, groundwater demand from buildout of the proposed land uses would be lower than projected for buildout of the current community plan land uses. Consequently, the proposed project could result in a cumulatively beneficial impact on groundwater supply relative to the analysis in the community plan EIR and relative to projected groundwater demand from buildout of the site as assumed in the groundwater sustainability plan.

The proposed project would not impede the ability of DCWD or the groundwater sustainability agency or other agencies to implement programs and projects identified in the groundwater sustainability plan that would bring the subbasin into equilibrium; future developers of projects within the project site would not be directly responsible for implementing the programs and projects identified in the groundwater sustainability plan needed to ensure sustainability of groundwater resources.

The project contribution to water supply and groundwater sustainability plan implementation would be less than cumulatively considerable.

Noise

Proposed Project Impact Summary

The noise impacts of the proposed project are discussed in Section 9.0, Noise. The proposed project would result in the following significant noise impacts:

- Commercial Uses Stationary Noise Sources Resulting in a Permanent Substantial Noise Increase (Less than Significant with Mitigation);
- Bradbury, Vincent, and Shanks Road Traffic Noise Affecting On-Site Sensitive Receptors (Less than Significant with Mitigation); and
- Combined State Route 99/Train Noise that Exceeds Noise Standards at On-Site Sensitive Receptors (Less than Significant with Mitigation).

Geographic Scope

The geographic scope for cumulative traffic noise impacts generally is cumulative development in the Delhi area that contributes vehicle trips to local roadways, and cumulative development within the broader San Joaquin Valley, particularly Merced County, that contributes traffic to State Route 99. Operations on the UPRR line located adjacent to the site are assumed to have a broader geographic scope, though the origins and destinations of train trips has not been defined. Vehicle trips on State Route 99 and train travel on the UPRR are the dominant traffic noise sources that would affect noise sensitive residential receptors with the project site.

Cumulative Impacts

Past and present development within the vicinity and broader region has contributed to increased ambient noise levels, primarily as a result of increases in traffic volumes on local roadways, State Route 99, and the UPRR rail line. Probable future development within the region will exacerbate existing noise impacts over time by contributing additional traffic to State Highway 99 and to the segments of Bradbury, Vincent and Shanks roads adjacent to the site. However, while noise levels at all existing sensitive receptors in the project area that were evaluated in the noise report would increase under cumulative conditions without the proposed project, levels would remain under the County's 65 dB Ldn noise exposure standard. Nevertheless, cumulative traffic noise levels have and will likely increase the number of sensitive receptors at which noise levels exceed County standards. The cumulative impact is considered to be cumulatively considerable.

Project Contribution to Cumulative Impacts

Results of the noise report prepared for the proposed project are described in Section 9.0, Noise, and included in Appendix E. The primary potential cumulative noise effect is the project contribution to traffic noise levels under cumulative traffic volume conditions that could affect on-and/or off-site noise sensitive receptors.

On-Site Receptors – Traffic Noise on Local Roads

Table IX in the noise report shows that under the cumulative plus project conditions, the 65 dB Ldn noise contour would extend no further than 51 feet, 63 feet, and 64 feet from the centerline of Bradbury Road, Vincent Road, and Shanks Road, respectively. New sensitive receptors (residences and schools) will be located at least further distances along Bradbury Road and Vincent Road by virtue of the fact that both roads must be widened. The 65 dB Ldn contour would fall within the new, expanded roadway rights-of-way. Mitigation measure 9-2 requires that outdoor activity areas of on-site sensitive receptors be located outside of the 65 dB Ldn contour along Shanks Road or be shielded from traffic noise along the road, or a distance of 60 feet. Under cumulative conditions, this distance increases to 64 feet. Due to the slight increase in setback distance under cumulative conditions, it is assumed that mitigation measure 9-2 would also be sufficient to substantially lessen the project contribution to cumulative traffic noise to less than cumulatively considerable.

Off-Site Receptors – Traffic Noise on Local Roads

Table VI in the noise report shows changes in traffic noise levels at representative off-site noise sensitive receptors under 2045 cumulative conditions with and without the proposed project. Under with project conditions, the change in traffic noise levels is equal to or less than 4dB Ldn at all receptors (4 dB at two of eight receptors, with no more than a one dB increase at the remaining six receptors). Where existing traffic noise levels are less than 60 dB Ldn at a receptor, which is the case at all of the receptor locations, a 5 dB Ldn or greater increase with the proposed project is considered significant. Consequently, the proposed project impact on off-site sensitive receptors would be less than cumulatively considerable.

On-Site Receptors - Combined State Route 99/UPRR Train Noise Impacts

Table X of the noise report and its accompanying text identify that under 2045 conditions (which includes cumulative traffic volumes on the highway that incorporate buildout traffic volumes from the project site), the combined State Route 99/UPRR Train 65 dB Ldn noise level contour would extend approximately 905 feet into the project site. A noise mitigation study prepared for the project, also found in Appendix E, identifies that a combinations of noise attenuation options such as soundwalls, building setbacks, and project design features, can be employed to substantially reduce the area of the site exposed to 65 dB Ldn or greater noise levels. Mitigation measure 9-3 requires that one or more of these options be implemented to ensure outdoor activity areas of residential uses are outside of the 65 dB Ldn noise contour. The noise mitigation study assumes maximum combined noise levels under cumulative plus project 2045 conditions as the basis for identifying mitigation options. Thus, mitigation measure 9-3 serves to reduce cumulative combined transportation noise from State Route 99/UPRR Train noise on future noise sensitive uses within the site to less than cumulatively considerable.

Transportation

Proposed Project Impact Summary

Transportation impacts are discussed in Section 10.0, Transportation. The proposed project would result in the following transportation impacts:

 Impact 10-1. Conflict with CEQA Guidelines Section 15064.3 by Exceeding the Applicable Threshold for VMT (Less than Significant).

Project Contribution to Cumulative Impacts

The VMT analysis in Section 10.0 concludes that the VMT impact of the project is less than significant. The Technical Advisory on Evaluating Transportation Impacts in CEQA identifies that where an efficiency-based VMT threshold of significance is used to evaluate the impact significance, as is the case for the proposed project:

A project that falls below an efficiency-based threshold that is aligned with longterm environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of less-than-significant project impact would imply a less-than-significant cumulative impact, and vise versa. This is similar to the analysis typically conducted for greenhouse gas emissions, air quality impacts, and impacts that utilize plan compliance as a threshold of significance

Consequently, the cumulative VMT impact of the project is also less than cumulatively considerable.

Utilities

To serve the project with water supply and wastewater collection/treatment services, the DCWD must construct several off-site improvements. These are described in Section 4.0, Project

Description, and in Section 11.0, Utilities. Water supply, wastewater conveyance, and storm drainage improvements must be made within and adjacent to the project site (within adjacent streets). The impacts of constructing infrastructure are generally short term in nature (e.g., traffic, noise, air quality). Such impacts are discussed both in the initial study checklist included in Appendix A, and individual environmental topic sections of this SEIR. All are either less than significant, or can be mitigated to less than significant. Impacts of constructing utility infrastructure are localized to the area of construction, and typically do not combine with other unrelated construction activities to create significant, short-term, cumulative impacts. Consequently, the cumulative impacts of utility construction activities are less than considerable, and the project contribution to such impacts would be less than cumulatively considerable.

15.0 Significant Unavoidable Impacts

15.1 CEQA Requirements

A significant adverse unavoidable environmental impact is a significant adverse impact that cannot be reduced to a less-than-significant level through the implementation of mitigation measures. CEQA Guidelines section 15093 requires that a lead agency make findings of overriding considerations for unavoidable significant adverse environmental impacts before approving a project.

CEQA Guidelines section 15093(a) requires the decision-making agency to balance, as applicable, the economic, legal, social, technological, or other benefits of a project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable." CEQA Guidelines section 15093(b) states that when the lead agency approves a project which will result in the occurrence of significant effects which are identified in the final EIR, but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. The statement of overriding considerations shall be supported by substantial evidence in the record.

15.2 Impact Analysis

Based on the environmental analysis provided in this SEIR, the project would not result in significant unavoidable impacts.

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16.0 Alternatives

16.1 CEQA Requirements

CEQA Guidelines section 15126.6(a) requires a description of a range of reasonable alternatives to the proposed project, or to the location of the project, which could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. It also requires an evaluation of the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project, but must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

CEQA Guidelines section 15126.6(b) further requires that the discussion of alternatives focus on those alternatives capable of eliminating any significant adverse environmental impacts or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly. The EIR must present enough information about each alternative to allow meaningful evaluation, analysis and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

16.2 Project Objectives and Significant Impacts

As discussed above, alternatives must be able to meet most of the basic objectives of the project and avoid or substantially lessen any of the significant effects of the project. Therefore, the proposed project objectives and significant effects are summarized here.

Project Objectives

The project objectives are listed in Section 4.1, Project Objectives. There are replicated here for ease of reference:

The objectives for the preferred project include the following:

- Accommodate projected population, housing, and employment consistent with the growth strategies of the Delhi Community Plan;
- Provide a mix of land uses including shopping, restaurants, and a variety of home types, sizes, and pricing, to accommodate income levels, cultures, and races;

- Support the reduction of Medium Density Residential within the Bradbury Master Plan area to provide for larger residential lots to address the market conditions which lean toward affordable homes on larger lots. In addition, support the development of residential homes in place of Business Park to address the market conditions which do not support Business Park within the Bradbury Master Plan Area. "It is recognized that land use designations contained in the Delhi Community Plan Land Use Diagram can be blended within the Master Plan neighborhoods as long as the acres, the variety of housing densities, and public amenities in Table 3.2 have been met." (Delhi Community Plan p. 3-8);
- Provide job opportunities and neighborhood-serving commercial uses for the community;
- Adopt a plan that is consistent with policies and objectives of SB 375;
- Upgrade and expand existing infrastructure and develop new infrastructure for the Bradbury Master Plan Area to address public services such as water, sewer, and drainage necessary to support growth;
- Provide an interconnected street grid pattern that disperses traffic, eases congestion, and provides a high-quality pedestrian network and public realm that encourages convenient access to local parks and to a future school site within the Bradbury Master Plan Area;
- Design a circulation network within the Bradbury Master Plan Area that promotes a safe pedestrian and bicycling environment as contemplated by the Community Plan;
- Promote an additional school site within the Bradbury Master Plan Area to serve current and future residents. Locate the school site within the Bradbury Master Plan Area such that its location is the least disruptive to future residents in terms of traffic congestion and parking;
- Promote a variety of parks to meet the passive and active recreational needs of the Bradbury Master Plan Area;
- Implement the Delhi Community Plan architectural and landscape design standards as amended by the submittal of the SEIR documents for the Bradbury Master Plan area;
- Incorporate healthy development principles that include Energy Efficient Construction, walkable neighborhoods, and stormwater management within the Bradbury Master Plan Area;
- Develop an economically feasible community that reasonably minimizes its impact on biologically sensitive natural resources and utilizes existing and planned public infrastructure and services in an efficient manner;
- Support the development of Medium Density Residential adjacent to park and neighborhood commercial within the Bradbury Master Plan Area to support Delhi Community Plan Implementation Measure LU 1.1b Land designated Medium or High Density Residential should be located near schools, parks, commercial and business centers, and major streets; and

 Implement a noise barrier along the eastern boundary of the Bradbury Master Plan that will be built to mitigate outside noise sources. In addition, future residential homes shall be constructed with material and installation methods which will reduce interior noise levels to be in compliance with designated noise standards.

Significant Impacts

Significant Impacts Reduced to Less than Significant with Mitigation Measures

- Air quality impact 5-2 regarding construction emissions effects, impact 5-3 regarding exceedance of criteria air emissions thresholds for NOx and PM₁₀, impact 5-5 regarding onsite, future sensitive receptor exposure to TACs during construction, and impact 5-6 regarding future on-site sensitive receptor exposure to TACs from U.S. Highway 101 and UPRR rail operations;
- 2. Bio impacts 6-2 through 6-8 regarding potentially significant impacts on specialstatus/protected wildlife species including American badger, San Joaquin kit fox, two bat species, two lizard species, burrowing owl, Swainson's hawk, and migratory birds and raptors;
- 3. GHG impacts 7-1 and 7-2 regarding generation of GHGs and conflict with applicable plan for reducing GHGs; and
- 4. Noise impact 9-3 regarding noise generation from commercial use stationary sources that affects planned on-site sensitive receptors; impact; impact 9-5 regarding traffic noise on Shanks Road that affects planned on-site sensitive receptors; and impact 9-6 regarding combined traffic noise from State Route 99 and train noise from UPRR that affects planned on-site receptors.

16.3 Alternatives to the Proposed Project

The following alternatives to the project are considered:

- Alternative 1: No Project Development Consistent with Existing Community Plan Land Uses;
- 2. Alternative 2: Reduced Scale; and
- 3. Alternative 3: Increased Density.

Per CEQA Guidelines section 15130, a no project alternative must be evaluated. Alternatives 2 and 3 were selected based on their ability to substantially reduce or avoid one or more of the significant mitigable impacts of the proposed project as summarized in Section 16.2 above.

The alternatives are described below, along with analysis of how each has potential to avoid or substantially lessen significant impacts associated with the proposed project.

Alternative 1: No Project - Development Consistent with Existing Community Plan Land Use

CEQA Guidelines section 15126.6 (e) requires the "No Project" alternative be evaluated along with its impacts. The "No Project" alternative analysis must discuss the existing conditions, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

Alternative Description

This alternative investigates what could be reasonably expected to occur on the project site in the reasonably foreseeable future if the proposed project were not approved. For purposes of identifying the no project alternative here, the "current plan" regulating land use within the site is the Delhi Community Plan. Refer back to Figure 3-4, Existing Delhi Community Plan Land Use Designations – Bradbury Master Plan Area, for an illustration of these uses and to Table 4-2, Community Plan/Proposed Master Plan Development Capacity Comparison, for the community plan projection of site development capacity per the existing land use designations. Development under the no project alternative would result in about 200 fewer residential units; 457,380 square feet of business park use, none of which is included in the proposed project; about six fewer acres dedicated to school use; and about 12 fewer acres committed to parks and bike paths.

No Project Alternative Attainment of Project Objectives

This alternative could meet many of the project objectives that are not related to proposed land use changes. The applicant's objective to modify land use to meet the applicant's understanding of current and projected market conditions for business park development and residential product types is the primary objective that would not be met.

No Project Alternative Impacts Comparison

This analysis identifies potential impacts of this alternative for the environmental topics evaluated in the body of this SEIR and those impacts to the significant, mitigable impacts of developing the site with under the proposed project land use plan.

Air Quality

Transportation would be the dominant source of criteria air emissions from the proposed project and from the no project alternative. Consequently, a comparison of vehicle trip generation can be generally representative of the criteria emission volumes that would be generated under each land use scenario. Table 6 of the transportation analysis included in Appendix F shows projected trip rates and volumes for existing community plan land uses and proposed project land uses. It shows that the existing community plan land use scenario for the site would generate a greater daily traffic volume than the proposed land use scenario. Therefore, the no project alternative would likely generate a higher volume of criteria air emissions than would the proposed project. This fact is
reinforced by the fact that the with business park uses, the no project alternative would generate higher truck traffic volumes, with emissions rates that are higher than for light- and medium duty vehicles typically associated with residential uses. The proposed project is considered superior to the proposed project for its lessening of significant impacts associated with criteria air emissions.

Contrary to the criteria air emissions conclusion, the no project alternative is superior to the proposed project regarding exposure of sensitive receptors to health risks from toxic air contaminants generated by traffic on State Route 99. The existing community plan land use plan for (no project alternative) places business park uses adjacent to the State Route 99. While the proposed project land use plan does place park uses adjacent to a significant portion of site boundary with State Route 99 to buffer sensitive uses from the highway, it nevertheless generally places residential uses closer to the highway than does the no project alternative. Consequently, the no project alternative is superior to the proposed project by lessening potential exposure of planned sensitive uses to toxic air contaminants.

No attempt is made here to weight the value in substantially lessening criteria emissions impacts relative to substantially lessening health risks impacts. Both are valuable outcomes. For this reason, the no project alternative and the proposed project are assumed to have similar air quality impacts.

Biological Resources

Both the no project alternative and proposed project would result in the entire site being developed with urban uses. Construction activities associated with both development scenarios would have similar potential to impact special-status species. Consequently, impacts of the no project alternative on biological resources are considered to be similar to the proposed project.

Greenhouse Gas Emissions

As described above in the analysis of air quality impacts, the no project alternative would result in a greater volume of daily vehicle trips and a higher percentage of truck trips than would the proposed project. Like criteria air emissions, the dominant source of GHG emissions in the emissions inventory of typical land use development projects is from transportation sources. Consequently, it is assumed that the no project alternative would generate a higher volume of GHG emissions than would the proposed project. Therefore, the no project alternative is inferior to the proposed project regarding generation of GHG emissions.

Water Supply

As described in Table 8-2, Change in Water Demand with the Proposed Project, the proposed project is estimated to demand about 21,069 gallons per day less water than would future development under the existing community plan land use scenario (no project alternative). This is equivalent to approximately 7,690,185 gallons per year or about 23 acre-feet per year – an approximately six percent reduction. Consequently, the no project alternative is inferior to the proposed project in that it would lower the volume of groundwater in storage relative to the proposed project.

Noise

The two primary noise issues associated with the proposed project are traffic noise generation and exposure of future noise sensitive receptors within the site to traffic noise.

Regarding traffic noise generation, as reported above in the air quality discussion for the no project alternative, the no project alternative would generate a higher volume of daily traffic than would the proposed project, with a higher percentage of the traffic consisting of trucks. Traffic noise levels generated by the no project alternative would; therefore, be greater than for the proposed project. The no project alternative is inferior to the proposed project for its potential to impact existing noise sensitive uses located on local roads onto which traffic from the site would be distributed, and for its potential to impact future noise sensitive uses within the site.

As also described above in the air quality discussion for the no project alternative, the proposed project generally places noise sensitive residential uses closer to the most significant existing and cumulative noise sources that affect the project site – State Route 99 and trains operating on the UPRR tracks. As a result, the no project alternative is superior to the proposed project, as it would lessen the significance of noise impacts on planned residential uses within the site.

Conversely, the proposed project eliminates over 450,000 square feet of business park uses, which would have potential to generate stationary noise sources that could affect future on-site sensitive residential receptors. However, because this effect is likely to be limited and would have not have the potential to affect as many sensitive receptors as would traffic noise, the traffic noise effects of the no project alternative are the prevailing factor in comparing its noise impacts to the proposed project.

Transportation

As described in the analysis of air quality impacts, the no project alternative would result in a greater volume of daily vehicle trips and a higher percentage of truck trips than would the proposed project. On its face, this could imply that the no project alternative has potential to generate more VMT than does the proposed project. However, the no project alternative business park land use designation would be a source of significant employment that does not exist for the proposed project and places that employment source directly adjacent to proposed residential uses. VMT generated by new residents employed at the business would be substantially reduced relative to average VMT for those residents in the absence of the employment generating use. Similarly, VMT for other local Delhi residents that find jobs at the business park could decline relative to existing conditions. On balance then, the no project alternative is assumed to have similar VMT effects as the proposed project.

Utilities

Impacts of constructing on-site utility improvements for the no project alternative would be similar to those for the proposed project; both scenarios would result in the entire project site being developed with urban uses. While detailed analysis of off-site water and wastewater infrastructure

requirements has not been conducted, it can be assumed that improvement requirements for both the no project alternative and proposed project would be similar. The improvements are needed for the project site to develop with urban uses regardless of the urban development scenario. Consequently, utility construction impacts of the no project alternative are assumed to be similar to those of the proposed project.

Alternative 2: Reduced Project Scale Description of the Alternative

The reduced scale alternative ("reduced scale alternative") consists of a reduction in residential development capacity sufficient to avoid the significant project impact from exposure of proposed on-site sensitive residential receptors to toxic air contaminants (TACs) generated by vehicle traffic, particularly heavy-duty trucks, on State Route 99. This issue is discussed in Section 5.0, Air Quality. This alternative would also avoid the significant noise impact resulting from exposure of on-site noise-sensitive receptors to the combined noise from traffic on State Route 99 and train travel on the adjacent UPRR track, as described in Section 9.0, Noise.

The HRA included in Appendix C concludes that sensitive residential receptors planned within approximately 800 to 1,200 feet of the western project site boundary (distance varies due to the distance of receptors from the highway and UPRR track) could be exposed to TACs at concentrations that exceed the cancer risk threshold of 20 in one million. For this alternative analysis, an average distance of 1,000 feet is assumed to be the distance from the UPRR track within which TAC exposures would cause a significant impact sensitive receptors. This "health risk" contour location is shown on Figure 16-1, Reduced Scale Alternative. This reduced scale alternative would eliminate all residential development in this setback area. The setback area contains roughly 23 acres that are planned for low-density residential use and roughly 6 acres planned for medium density use for a total of 29 acres, or about 11 percent of the 273-acre project site. At average densities of 5.1 units/acre and 8.1 units per acres for these respective uses as referenced in Table 4-1, about 120 low density and about 49 medium density units, or 169 units total, would be eliminated from the project. This represents about 16 percent of the planned total residential development capacity of 1,069 units.

CEQA Guidelines section 15041, Authority to Mitigate states the following:

Within the limitations described in Section 15040:

(c) With respect to a project which includes housing development, a Lead or Responsible Agency shall not reduce the proposed number of housing units as a mitigation measure or alternative to lessen a particular significant effect on the environment if that agency determines that there is another feasible, specific mitigation measure or alternative that would provide a comparable lessening of the significant effect. The reduced scale alternative reduces the number of proposed housing units as a basis to avoid significant effects. However, residential uses are the dominant proposed land use. Residential uses would have dominant responsibility for generating the significant project impacts. The proposed project also includes approximately 137,000 square feet of local neighborhood commercial uses that would contribute to the significance of several other significant project impacts. However, eliminating the commercial use to compensate for loss of residential use acreage could result in new or more severe significant impacts related to air quality, GHGs, noise, and transportation (VMT). The neighborhood commercial uses to services for project residents that otherwise would only be available at greater distance, and also provide local employment opportunities. The smart growth advantages of creating a mix of residential and commercial services would be diminished if the commercial uses were to be eliminated as a component of avoiding the TAC impact.

As a co-benefit of this alternative, the significant impact on planned residential receptors from combined traffic noise on State Route 99 and train travel on the UPRR track would also likely be avoided. Per the noise report included in Appendix E, the outdoor noise exposure standard of 65 dB Ldn at planned residential uses would be exceeded at residential uses planned within about 900 feet of the UPRR tracks. This setback would generally fall within TAC impact setback shown in Figure 16-1, as the UPRR tracks are about 25 feet to the west of the western property line of the project site.

It is assumed that the planned off-site water supply and wastewater improvements would remain necessary such that impacts of constructing these improvements would remain similar to those for the proposed project.

Reduced Scale Alternative Attainment of Project Objectives

This alternative could achieve project objectives. While this alternative would reduce residential development capacity relative to that proposed by the applicant, remaining residential development capacity would remain greater than assumed in the community plan – the objective of accommodating projected population and housing consistent with the community plan would still be met. Other land use design objectives could also be met through modifications to the proposed land use plan. However, it is uncertain whether the objective of developing an economically feasible community would be met. This alternative would reduce development revenue, with related uncertainty about whether doing so would affect the financial feasibility of funding infrastructure and amenities described in other objectives.



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Reduced Scale Alternative Impacts Comparison

The environmental effects of the reduced scale alternative are evaluated and compared to the proposed project for those impact topics evaluated in the body of this SEIR as summarized below.

Air Quality

The reduced scale alternative would eliminate the significant health risk impact identified for the proposed project. This alternative would also substantially lessen the significant impacts from VOC, NO_x and PM_{10} emissions. The reduced scale alternative is superior to the proposed project from criterial air pollutant impact perspective. This alternative would lessen but not avoid the significant impacts of the proposed project regarding fugitive dust and toxic air emissions during construction, as this alternative would require less land disturbance and less construction activity. Therefore, the reduced scale alternative is also superior to the proposed project relative to these effects.

Biological Resources

By reducing the developed area footprint of the proposed project by about 29 acres, this alternative would reduce the area of disturbance within which sensitive biological resources could be located. This alternative has potential to lessen the significance of, but not avoid, potentially significant, mitigable impacts of the proposed project on biological resources. Therefore, it would be superior to the proposed project from a biological resource perspective.

Greenhouse Gas Emissions

The reduced scale alternative would result in substantial reductions in GHG emissions because electricity use and vehicle use activity associated with the dominant residential uses would decline. If the 11 percent reduction in residential development capacity is applied to the total annual project emissions of 13,933 MT CO₂e identified in Table 7-6, emissions would decline by about 1,400 MT CO₂e per year. For this alternative, it is also assumed that the applicant would propose no natural gas infrastructure be provided to the residential uses. This alternative would lessen the significant GHG impacts of the project, but not avoid the impact. GHG emissions would still exceed the threshold of significance. This alternative would be superior to the proposed project.

Hydrology and Water Supply

With this alternative, water demand from developing the project site would decline. The project as planned does not have a significant impact on groundwater resources and could be served from existing groundwater supply. The reduced demand resulting from this alternative could be considered to have positive impact by retaining more groundwater in storage than would occur for the proposed project.

Noise

As described above, the reduced scale alternative would likely avoid the significant noise impact on planned residential uses resulting from exposure to combined traffic and train noise on State Route 99 and the UPRR, respectively. Traffic volumes generated by this alternative would be lower than for the proposed project. This could lessen the potentially significant traffic noise impact on planned

residential uses along Shanks Road. Because this alternative has potential to avoid and lessen two potentially significant noise impacts of the proposed project, this alternative would be superior to the proposed project from a noise perspective.

Alternative 3: Increased Residential Density Alternative Description of the Alternative

The increased residential density alternative ("increased density alternative") consists of two components: 1) maintaining the health risk-related residential development setback from the western property line as described in Alternative 2; and 2) increasing the 5.1 units per acre density of a portion of the remaining area currently planned for low density residential, to 8.1 units per acre consistent with the medium density residential development capacity that would be eliminated for loss of 169 residential units of residential development capacity that would be eliminated from the health risk setback area. This alternative is proposed to address the same TAC-related health risk and combined traffic/rail noise exposure impacts identified for Alternative 2. This alternative would have the net effect of maintaining the total proposed number of residential units, reducing the overall footprint of development, and increasing average residential density.

The proposed average low density residential and the medium density residential densities differ by 3.0 units per acre. Consequently, approximately 56 acres of the remaining area planned for low density residential use would need to be redesignated for medium density residential use to "recover" 169 units of residential development capacity. The location of the area to be redesignated is flexible. However, placing it adjacent to the area currently proposed as medium density residential would be logical from a land use compatibility standpoint. This location would also incentivize more new residents to walk or ride bicycles to access services provided at the neighborhood commercial use, thereby potentially reducing vehicle trip volume and reducing air and GHG emissions.

It is assumed that this alternative would trigger the need for the same off-site infrastructure improvements identified for the proposed project such that impacts of constructing these improvements would remain similar to those for the proposed project.

Increased Density Alternative Attainment of Project Objectives

This alternative would largely achieve the objectives of the proposed project. However, this alternative would not meet a key objective to provide lower density housing that meets the applicant's understanding of current and projected residential product type market conditions.

Increased Density Alternative Impacts Comparison

The environmental effects of the increased density alternative are evaluated and compared to the proposed project for those impact topics evaluated in the body of this SEIR as summarized below.

Air Quality

The increased density alternative would eliminate the significant health risk impact identified for the proposed project. It would not lessen the significant VOC, NO_x and PM_{10} emissions impacts of the proposed project because development capacity would remain the same as for the proposed project; the same sources of criteria air emissions would be retained. This alternative would lessen but not avoid the significant impacts of the proposed project regarding fugitive dust and toxic air emissions during construction, as this alternative would require less land disturbance and less construction activity. This alternative is superior to the proposed project.

Biological Resources

Like the reduced scale alternative, the increased density alternative would reduce the developed area footprint of the proposed project by about 29 acres. Consequently, this alternative would reduce the area of disturbance within which sensitive biological resources could be located. This alternative has potential to lessen the significance of, but not avoid, potentially significant, mitigable impacts of the proposed project on biological resources. Therefore, it would be superior to the proposed project from a biological resource perspective.

Greenhouse Gas Emissions

The increased density alternative would have similar potential to generate GHG emissions as would the proposed project. Mobile source emissions would be similar because vehicle trip generation rates for low density residential and medium density residential are the same. However, placing increased residential density near the planned neighborhood commercial center could result in an incremental reduction in vehicle trips if a higher percentage of new residents elect to walk or ride bicycles to access local services. GHG emissions associated with electricity use are also assumed to be similar. For this alternative, it is also assumed that the applicant would propose no natural gas infrastructure be provided to the residential uses. The GHG impacts of this alternative are assumed to be similar to those of the proposed project.

Hydrology and Water Supply

This alternative would retain the development capacity assumed for the proposed project. Water demand from developing the project site would be similar under this alternative. Effects on groundwater for both the proposed project and this alternative would be similar.

Noise

As described above, the increased density alternative would likely avoid the significant noise impact on planned residential uses resulting from exposure to combined traffic and train noise on State Route 99 and the UPRR, respectively. Traffic volumes generated by this alternative would be similar to the proposed project; the potentially significant traffic noise impact on planned residential uses along Shanks Road would be similar to the proposed project. Because this alternative has potential to avoid a potentially significant noise impact of the proposed project, this alternative would be superior to the proposed project from a noise perspective.

16.4 Comparison of Alternatives

Pursuant to CEQA Guidelines section 15126.6(a), an EIR shall evaluate the comparative merits of the alternatives. The significance of effects of the alternatives relative to the proposed project are summarized Table 16-1, Impact Comparison – Proposed Project versus Alternatives. The table includes information on whether the alternatives have potential to lessen or avoid the significant, mitigable impacts of the proposed project. Less than significant impacts of the proposed project are not included in the table per CEQA Guidelines section 15126.6(a), which requires that alternatives be evaluated that avoid or substantially lessen any of the significant effects of the project.

16.5 Environmentally Superior Alternative

The no project alternative would have impacts that are similar to the proposed project. Of the remaining two alternatives, Alternative 2, Reduced Scale Alternative, is the environmentally superior alternative. It would avoid two potentially significant impacts of the proposed project, and lessen the significance of several other impacts given its smaller development footprint and reduced overall development capacity. However, Alternative 2 may not meet a key objective regarding the financial feasibility of the project, as the alternative would reduce revenues available to the applicant that may be needed to feasibly fund infrastructure, site amenities, and other development costs.

Table 16-1 Impact Comparison – Proposed Project versus Alternatives

Environmental Impact	Project Impact	Alternative #1 No Project	Alternative #2 Reduced Scale	Alternative #3 Increased Density
AQ 5-1 - Inconsistency with Air District Ozone and Particulate Matter Attainment Plans	LTSM	Inferior to Proposed Project	Superior to Proposed Project	Similar to Proposed Project
AQ 5-2 - Criteria Air Pollutant Emissions During Construction that Exceed Air District Thresholds	LTSM	Inferior to Proposed Project	Superior to Proposed Project	Superior to Proposed Project
AQ 5-3 - Operational NOx and PM10 Criteria Air Pollutant Emissions that Exceed Air District Thresholds	LTSM	Inferior to Proposed Project	Superior to Proposed Project	Similar to Proposed Project
AQ 5-5 - Expose Sensitive Receptors to Toxic Air Contaminants During Construction	LTSM	Similar to Proposed Project	Superior to Proposed Project	Superior to Proposed Project
AQ 5-6 - Expose New On-Site Sensitive Receptors to New and Existing Sources of Toxic Air Contaminants	LTSM	Superior to Proposed Project	Superior to Proposed Project	Superior to Proposed Project
Bio 6-2, 6-3, 6-4, 6-5, 6-6, 6-7 and 6-8 - Potentially significant impacts on special-status/protected wildlife species including American badger, San Joaquin kit fox, two bat species, two lizard species, burrowing owl, Swainson's hawk, and migratory birds and raptors	LTSM	Similar to Proposed Project	Superior to Proposed Project	Superior to Proposed Project
GHG 7-1 – Generation of GHG emissions	LTSM	Inferior to Proposed Project	Superior to Proposed Project	Similar to Proposed Project
GHG 7-2 – Conflict with Applicable GHG Reduction Plan	LTSM	Inferior to Proposed Project	Superior to Proposed Project	Similar to Proposed Project
Noise 9-3 - Commercial Use Stationary Noise Sources Resulting in a Permanent Substantial Noise Increase	LTSM	Similar to Proposed Project	Similar to Proposed Project	Similar to Proposed Project
Noise 9-5 - Traffic Noise on Shanks Road that Affects Planned On-Site Sensitive Receptors	LTSM	Inferior to Proposed Project	Superior to Proposed Project	Similar to Proposed Project
Noise 9-6 - Combined State Route 99/Train Noise that Affects Planned On-Site Sensitive Receptors	LTSM	Superior to Proposed Project	Superior to Proposed Project	Superior to Proposed Project
Project Objectives		Partially Met	Partially Met	Partially Met

SOURCE: EMC Planning Group 2023

NOTE: LTSM – Less-Than-Significant with Mitigation

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