Appendix IS

Initial Study for South Livermore Sewer Expansion Project




South Livermore Sewer Expansion Project

Initial Study

prepared by

City of Livermore
1052 South Livermore Avenue
Livermore, California 94550
Contact: Andy Ross, Senior Planner

prepared with the assistance of

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

May 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AGVT	Agriculture/Viticulture
amsl	above mean sea level
BAAQMD	Bay Area Air Quality Management District
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CNEL	Community Noise Equivalent Level
CO_2	carbon dioxide
CWA	Clean Water Act
dB	decibels
dBA	A-weighted sound pressure level
DNL	Day-Night Average Level
DOC	California Department of Conservation
DOF	California Department of Finance
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
GSP	Groundwater Sustainability Plan
GWP	global warming potential
I-580	Interstate 580

L_{ea}	equivalent noise level
LARPD	Livermore Area Recreation and Park District
LF	linear feet
LPD	Livermore Police Department
LPFD	Livermore-Pleasanton Fire Department
LMC	Livermore Municipal Code
LRA	Local Responsibility Area
NAAQS	National Ambient Air Quality Standards
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
PBDB	Paleobiology Database
PD-SLVSP	Planned Development – South Livermore Valley Specific Plan
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	particulate matter with a diameter equal to or less than 2.5 microns
PM_{10}	particulate matter with a diameter equal to or less than 10 microns
PPV	peak particle velocity
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SLVAP	South Livermore Valley Area Plan
SLVSP	South Livermore Valley Specific Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SRA	State Responsibility Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SVP	Society of Vertebrate Paleontology
TAC	toxic air contaminant
UCMP	University of California Museum of Paleontology
UGB	Urban Growth Boundary
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UWMP	Urban Water Management Plan
VOC	volatile organic compound

Initial Study

The City of Livermore, as the Lead Agency, prepared this Initial Study for the South Livermore Sewer Expansion Project in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et. seq.), and the regulations and policies of the City of Livermore, California.

1. Project Title

South Livermore Sewer Expansion Project (project)

2. Lead Agency Name and Address

City of Livermore
Community Development Department
1052 South Livermore Avenue
Livermore, California 94550

3. Contact Person and Phone Number

Andy Ross, Senior Planner
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(925) 960-4475

4. Project Location

The project alignment is generally located southeast of the City of Livermore within unincorporated Alameda County, California. A portion of the project alignment is located within the City of Livermore and another portion aligns with the City's Sphere of Influence boundary. Phase 1 of the alignment would be located on Tesla Road from Buena Vista to Greenville Road, Buena Vista Avenue between East Avenue and Tesla Road, and Greenville Road from Tesla Road to approximately 5,900 feet south of Tesla Road. The alignment along Tesla Road is adjacent to the City's Sphere of Influence, with the western portion of the alignment along South Livermore Avenue within the city boundary and UGB. The portion along Buena Vista Avenue is within the City's Sphere of Influence and adjacent to the city boundary and UGB at East Avenue. The alignment along Greenville Road is outside the City's Sphere of Influence. The alignment along Buena Vista Avenue and Tesla Road from Buena Vista Avenue to Greenville Road is adjacent to SLVSP Subareas 1 and 2.

The project also includes two potential future phases of the sewer alignment. The western future phase would be located on South Livermore Avenue from approximately 520 feet northwest of Concannon Boulevard to Tesla Road, and on Tesla Road from South Livermore Avenue to Buena Vista Avenue. The eastern future phase would be located on Tesla Road from Greenville Road to approximately 3,000 feet east of Greenville Road.

An additional component of the project that would involve sewer improvements in the City limits (the Bottleneck Project) is located within the City of Livermore, in segments along East Avenue (three segments between 7th Street and Dolores Street and one segment just west of Buena Vista Avenue). The Bottleneck Project would be completed as part of Phase 1.

The project alignment (all phases) is located within existing paved rights-of-way. Figure 1 shows the regional context of the project alignment and Bottleneck Project, and Figure 2 shows the project alignment and Bottleneck Project in its vicinity context. Regional access to the project alignment and Bottleneck Project is available via Interstate 580 (I-580), which is located approximately 2.6 miles north of the project alignment and approximately 1.5 miles north of the Bottleneck Project.

5. Project Sponsor's Name and Address

City of Livermore
1052 South Livermore Avenue
Livermore, California 94550

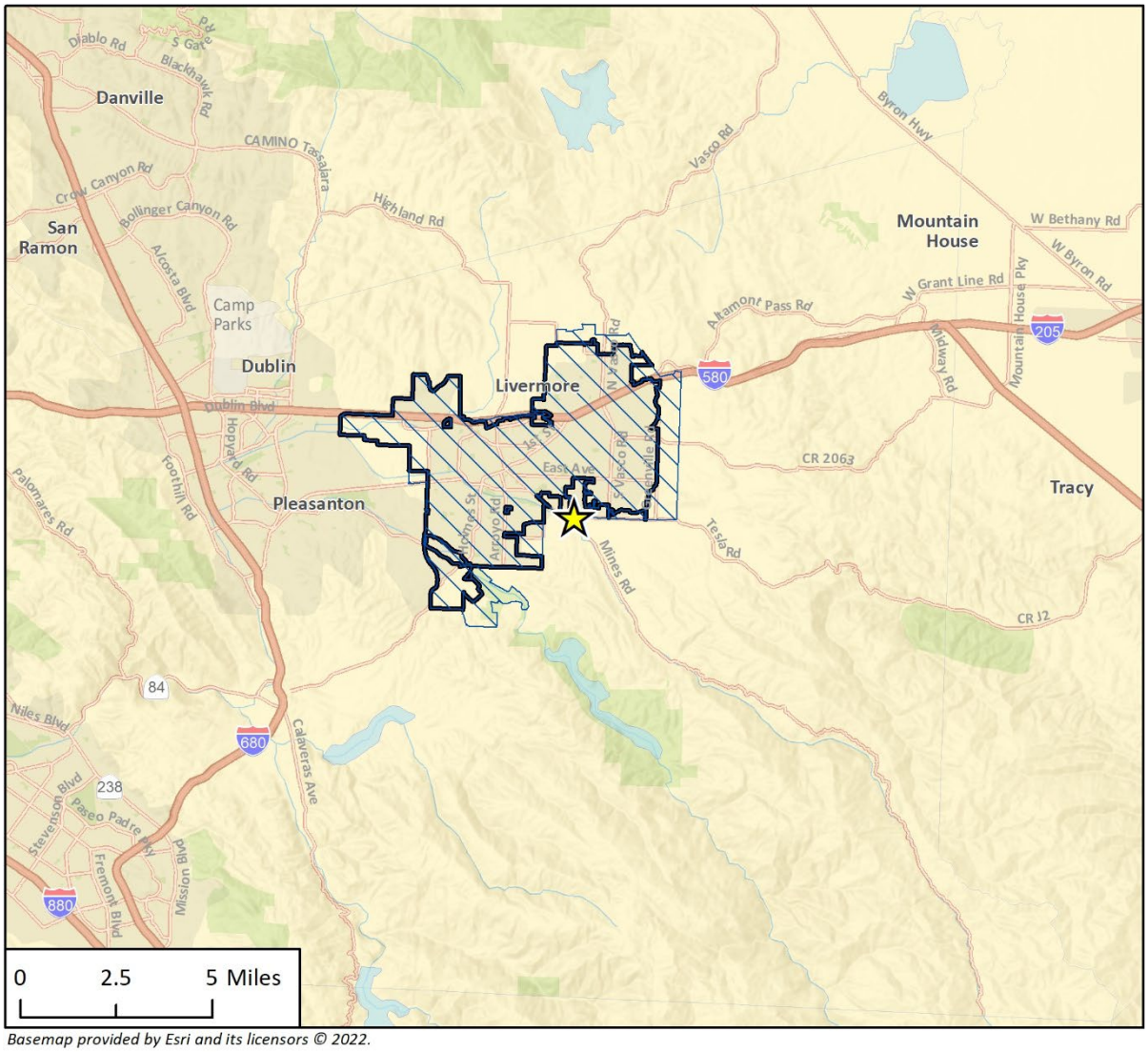
6. General Plan Designation

The project alignment is located within existing public roadways rights-of-way and does not have a land use designation. Land use adjacent to much of the project alignment is designated in the City's General Plan Map as Agriculture/Viticulture (AGVT). Additional parcels alongside the alignment are designated as Rural Residential (RR), Urban Medium High Residential (UMH), and Urban High Residential (UH), Community Facility (CF) Parks, Trailways, Recreation Areas (OSP), Agricultural Preserve (SV-AP), and Vineyard Commercial (SV-VC) land uses (City of Livermore 2015).

7. Zoning

The project alignment is located within existing public roadway rights-of-way and is not zoned. A portion of the parcels adjacent to the project alignment are zoned by the City of Livermore, while others are zoned by Alameda County. Parcels zoned by the City primarily include Planned Development – South Livermore Valley Specific Plan (PD-SLVSP), along with one adjacent parcel zoned as Education and Institutions (E), one adjacent parcel zoned as Open Space Agricultural (OS-A), and one adjacent parcel zoned as South Livermore Valley Agricultural (SLV-AG) (City of Livermore 2015). Parcels zoned by Alameda County include Agriculture, Single Family Residential, and Planned Development (County of Alameda 2021). Generally, surrounding and adjacent parcels in the area consist of residential development, commercial development, vineyards and wineries, and open space uses compliant with City's General Plan Land Use element and the County's Zoning Ordinance. Furthermore, the project alignment is also located within the Vineyard Area of the SLVAP.

Figure 1 Regional Location



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Project Location

Livermore City Boundary

Livermore Sphere of Influence

N

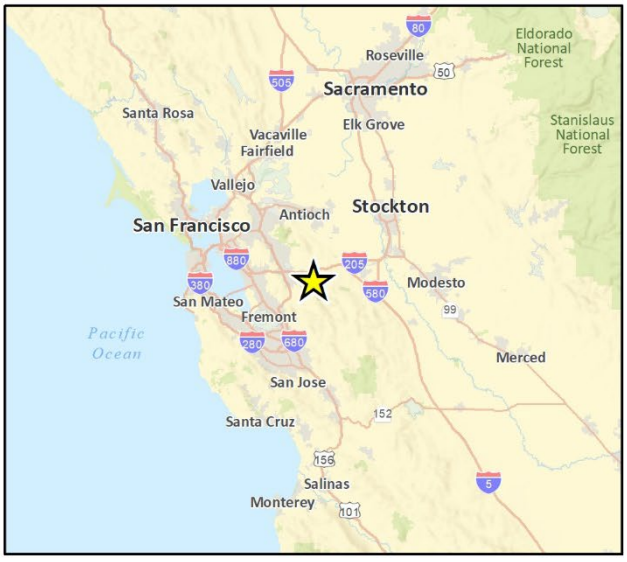

Figure 2 Project Location

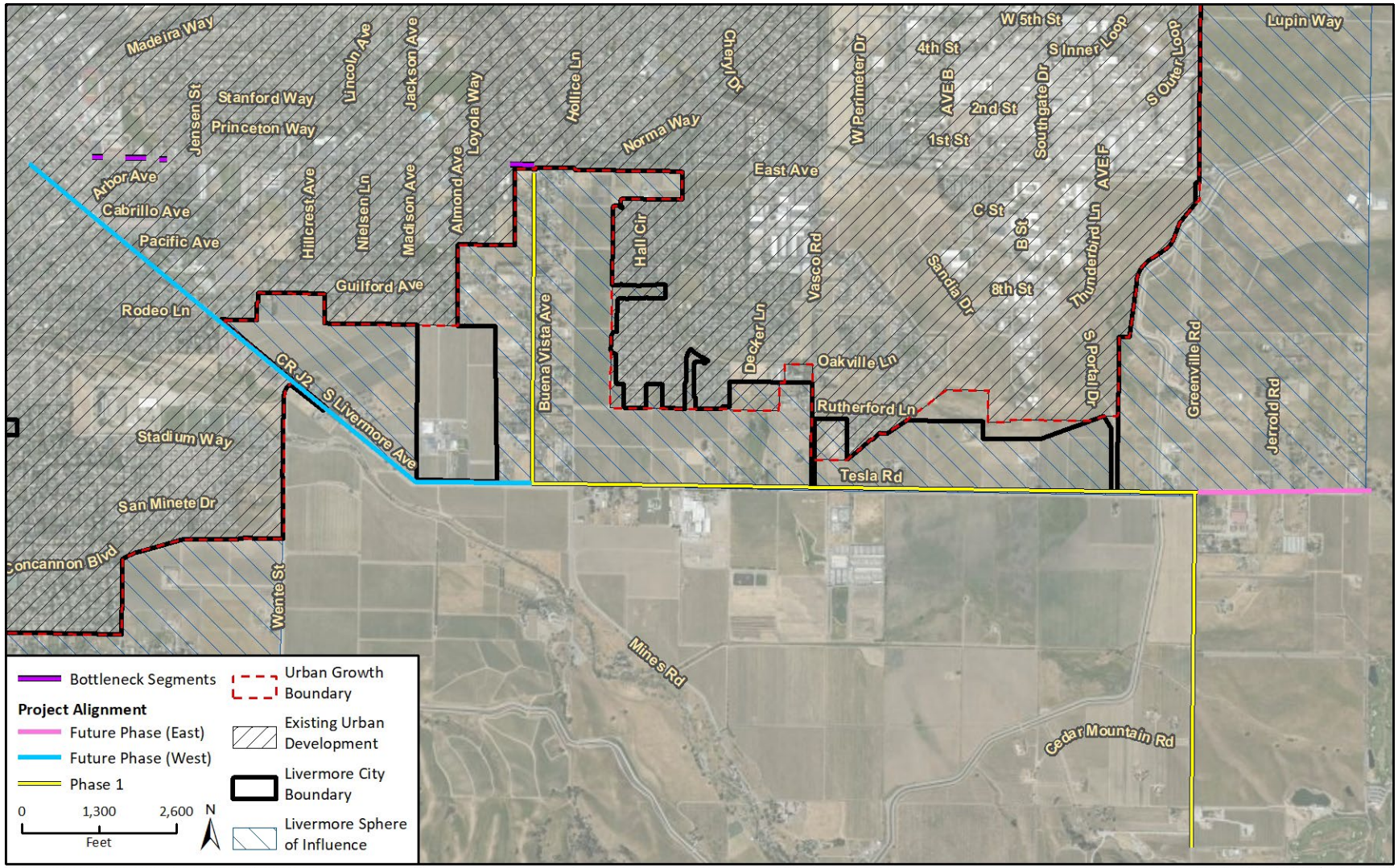

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Fig 2 Project Location - Landscape 20220504

8. Project Description

Project Background

South Livermore Valley Area Plan

The County of Alameda adopted the South Livermore Valley Area Plan (SLVAP) in November 1992 as part of a collaborative effort between the cities of Pleasanton and Livermore, and Alameda County to create a planned area that preserves, promotes, and enhances viticulture and other cultivated agriculture. The SLVAP is a policy document that establishes criteria for future development for approximately 15,500 acres of undeveloped land in unincorporated areas south and east of the City of Livermore. The SLVAP limits development to areas that do not conflict with current or proposed agricultural uses in order to preserve and enhance viticulture and other cultivated agriculture. The County prepared a Draft EIR for the SLVAP (State Clearinghouse No. 1996052025). The Alameda County Planning Department certified the Final EIR (1992 EIR) and approved the project in November 1992 (County of Alameda 2003).

South Livermore Valley Specific Plan

The City adopted the SLVSP on November 17, 1997, and amended it in February 2004. In 1993, the City initiated the specific planning process to implement the urban component of the County's Area Plan to guide development and promote and enhance viticulture and agriculture in South Livermore Valley. The SLVSP is a policy document that establishes criteria and a regulatory framework for future development in South Livermore Valley, which is located south of the City of Livermore boundary. The SLVSP incorporates several goals, development standards and policies that aim to conserve agricultural and natural resources in the plan area. The City prepared a Draft Environmental Impact Report (EIR) for the SLVSP and General Plan Amendment (State Clearinghouse No. 96052025). The City certified the Final EIR and General Plan Amendment (1997 EIR) and approved the SLVSP in September 1997.

The proposed sewer expansion would remove a constraint to and serve development potential of adjacent parcels as envisioned under the SLVSP; therefore, this analysis relies on the 1997 EIR for the SLVSP.

South Livermore Urban Growth Boundary Initiative

In March 2000, the City of Livermore voters approved the South Livermore Urban Growth Boundary (UGB). This voter initiative adopted policies into the City's General Plan for the establishment of the UGB in South Livermore. The UGB forms a southern border, beyond which urban development (including extended sewer and water service) is permitted only under limited exceptions. In addition, the UGB further protects and enhances agriculture and open space in the South Livermore Valley Specific Plan (SLVSP) area by regulating where development is permitted within South Livermore. Finally, the initiative reduces urban sprawl by preventing uncontrolled urban development that could otherwise encroach into existing agricultural land or open space areas. Figure 3 and Figure 4 show the UGB in relation to the proposed east and west segments of the project.

Figure 3 Sewer Extension and UGB - West

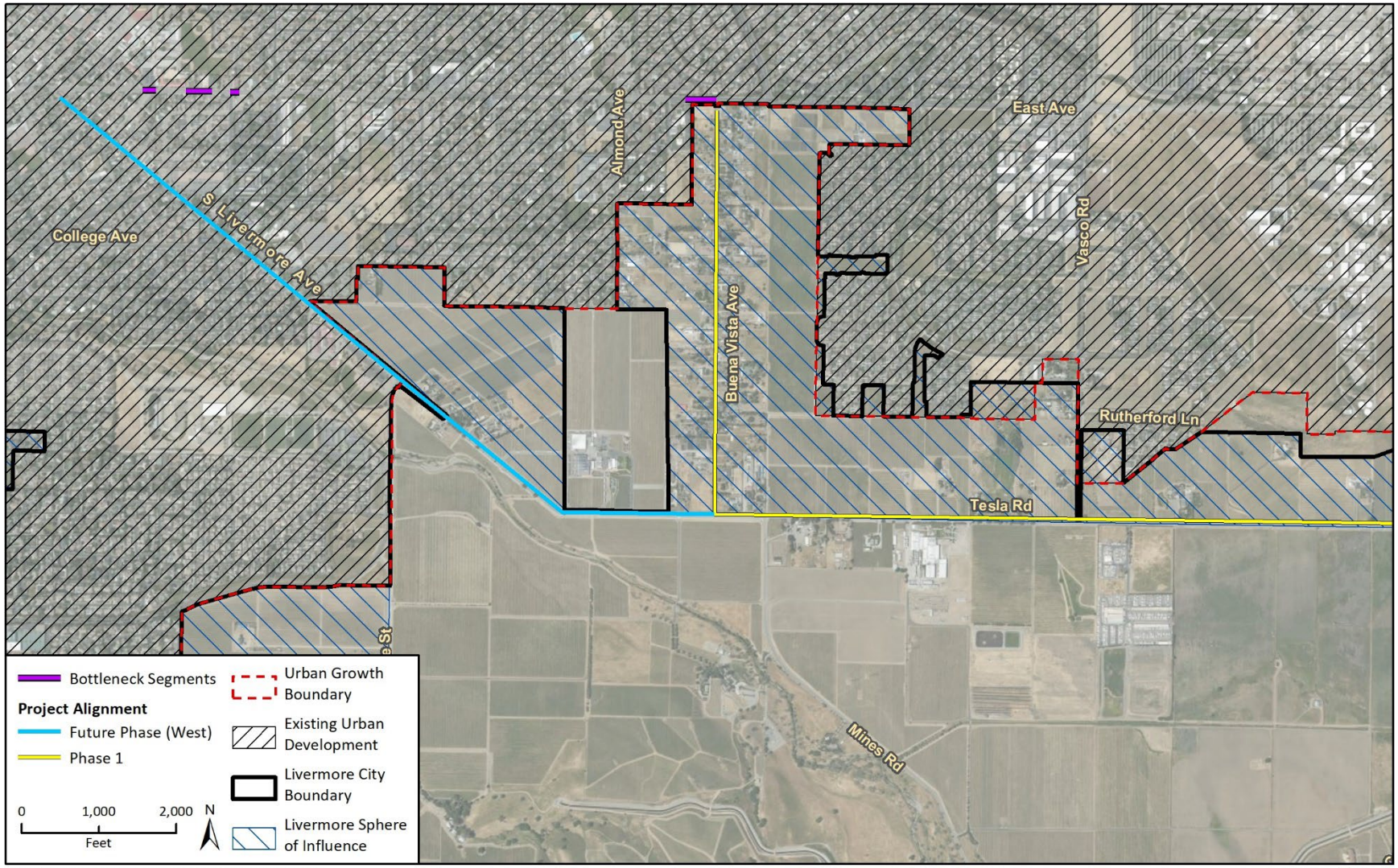

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Fig 3 Conceptual Plans_West

Figure 4 Sewer Extension and UGB - East

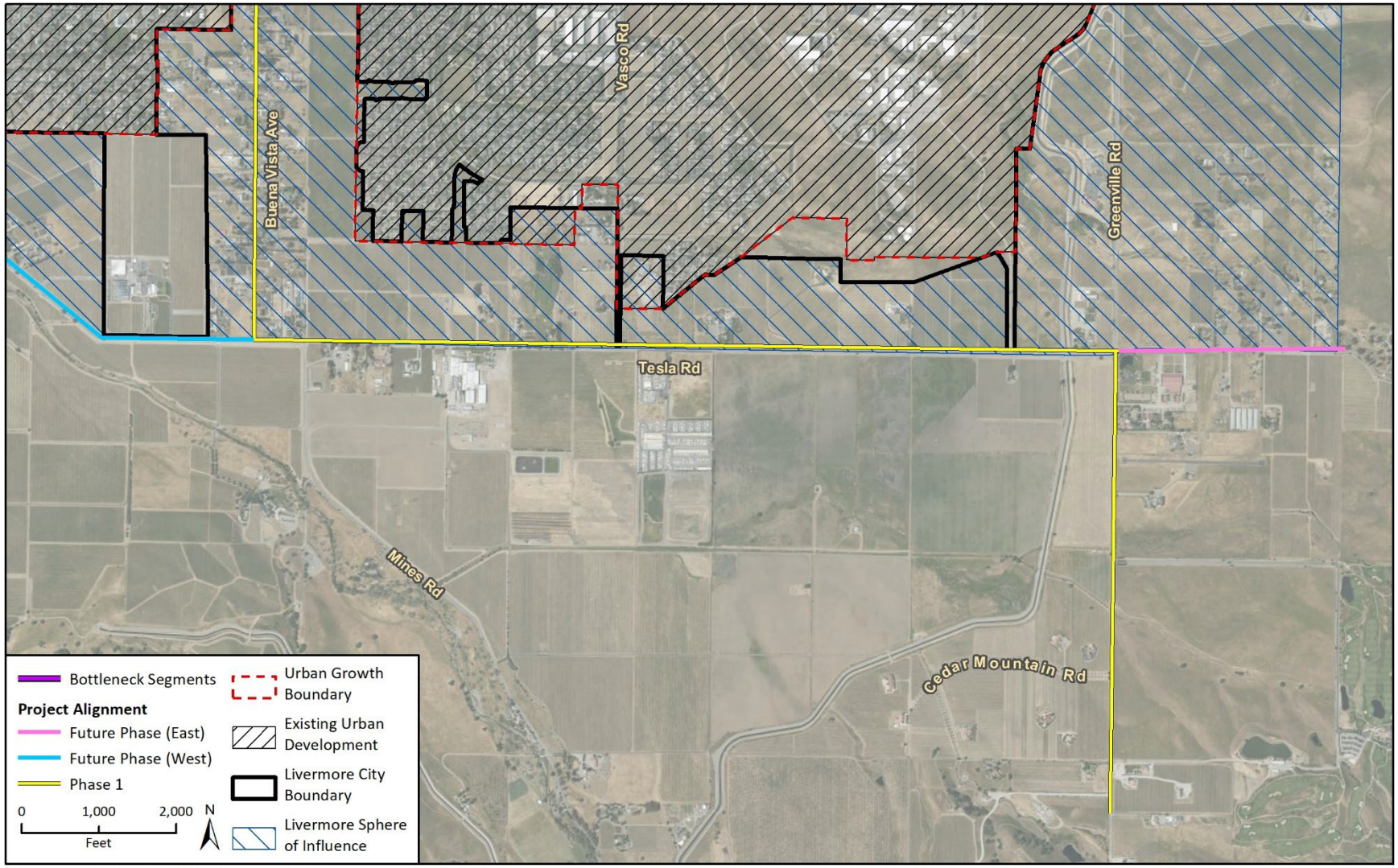

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Fig 3 Conceptual Plans_West

Because connection to urban services such as sanitary sewer is limited by the UGB, many residential and commercial uses in South Livermore Valley rely on on-site wastewater treatment systems (septic systems). In South Livermore Valley, the Regional Water Quality Control Board, County Department of Environmental Health, and Zone 7 Water Agency (Agencies) have restricted issuing permits for new septic systems or replacing failing septic systems.

The Agencies' positions reflect their missions to protect the Tri-Valley's groundwater basin. The Agencies have identified high nitrate concentrations in groundwater throughout the Tri-Valley resulting from past livestock operations and failing, undersized, or inefficient septic systems. These issues have the potential to adversely affect water quality and public health, safety, and quality of life. The inability to construct, expand, or replace septic systems or connect to the sanitary sewer is negatively affecting the South Livermore Valley wine industry and related uses thus preventing the vision of the Livermore General Plan, SLVAP and SLVSP.

Alameda Urban Growth Boundary Initiative

In November 2000, Alameda County voters passed Measure D. The purpose of Measure D is to preserve agricultural lands and to protect open space, watersheds, and wildlife habitat. Measure D set a county urban growth boundary that restricts subdivisions of the farms and ranches in eastern Alameda County, including North Livermore and the South Livermore Valley. Measure D amended portions of the County General Plan, including the East County Area Plan (ECAP). The initiative did not supersede or change the provisions of the SLVAP in the area to which the plan applied on February 1, 2000. However, the amended ECAP programs and policies place limits on density, development standards, and the geographical extent of the SLVAP.

Project Overview

The project would amend the South Livermore Valley UGB language to allow the extension of sanitary sewer lines to serve adjacent parcels containing residences and wineries located within and near the City of Livermore. This amendment would allow for the installation of approximately 5 miles of new sewer lines to support existing uses and future development consistent with the General Plan, SLVSP, and SLVAP in South Livermore Valley, subject to Alameda County Measure D. The purpose of the project is to improve groundwater quality in the South Livermore Valley area, serve existing development potential consistent with the City's General Plan and SLVSP, and enhance the short- and long-term economic viability of agriculture and viticulture in the South Livermore Valley area. Subject to necessary approvals and annexation into the City, the project would also allow existing residences on Buena Vista Avenue to connect to the City's wastewater system and cease the use of their on-site septic systems. The project is intended to support uses that are consistent with the City's General Plan, SLVSP, or current zoning; should development on adjacent parcels that is not consistent with existing land use designations and zoning be proposed, additional CEQA review would be required.

Phase 1 of the proposed sewer extension would be installed within Tesla Road from Buena Vista Avenue to Greenville Road, within Buena Vista Avenue from East Avenue to Tesla Road, and within Greenville Road from Tesla Road to approximately 5,900 feet south of Tesla Road. The expanded sewer facilities would allow existing and future wineries, visitor serving uses, and residences to connect to the City's wastewater system in conformance with the Livermore General Plan, South Livermore Valley Specific Plan, and/or South Livermore Valley Area Plan, subject to the provisions of Alameda County Measure D.

The City's 2017 Sewer Master Plan also identifies a Bottleneck Project (BO-CIP-P06) located on East Avenue. Preliminary analysis of the proposed project identified four segments of 12-inch sewer pipes that may need to be upsized on East Avenue between Maple Street and Buena Vista Avenue (City of Livermore 2017). The locations of each segment are shown in Figure 5. In total, approximately 950 linear feet (LF) would need to be upsized to accommodate the proposed project. Therefore, the proposed project may require the Bottleneck Project to be undertaken sooner than originally anticipated.

Two potential future phases of the sewer alignment would install sewer pipelines within South Livermore Avenue from approximately 520 feet northwest of Concannon Boulevard to Tesla Road, and on Tesla Road from South Livermore Avenue to Buena Vista Avenue (western future phase); and within Tesla Road from Greenville Road to approximately 3,000 feet east of Greenville Road (eastern future phase). The western future phase would provide redundancy within the sewer collection system, and the eastern future phase would expand the availability of services to several parcels east of Greenville Road.

The project would not require ground disturbance in agricultural or other natural areas, nor would it require vegetation removal.

Construction

Construction is anticipated to commence in 2024 and last for approximately 12 months, ending in 2025. The project may be constructed in phases based on available funding. Construction would require one lane of the affected public roadways to be closed at any given time. To that end, a traffic control plan is proposed that would regulate worker parking, construction staging, roadway improvements and potential traffic detours during project construction. Construction staging, laydown areas, and worker parking would be provided along the project alignment in one travel lane, one bike lane, and one shoulder. The contractor may work with private property owners as feasible, or utilize the City's Maintenance Service Center for additional staging. The City would post signage along the alignment and on roadways leading up to it before and during construction to give advance warning of road closures and detours. Detour signs for bicycle lane users would also be provided to facilitate safe crossing while portions of the bicycle lanes are closed.

Construction would occur 5 days per week to expedite the work and minimize traffic impacts. Limited weekend work may occur to accommodate the project schedule at the discretion of the City; however, total working days per month are not expected to exceed 22 days. Construction of the project would involve the installation of approximately 27,000 LF of sewer. If the contractor installs 150 LF per day as anticipated, then this would take approximately 180 working days. Equipment would include excavators, backhoes, front loaders, dump trucks, and shoring and paving equipment.

Excavation depths would vary by location, with most depths between 5 and 15 feet below ground surface. Approximately 1,000 LF along Greenville Road south of Tesla Road would require excavation between 15 and 18 feet, and approximately 1,200 LF along Tesla Road east of Vasco Road would require excavation between 15 and 26 feet.

Figure 5 Bottleneck Segment Locations

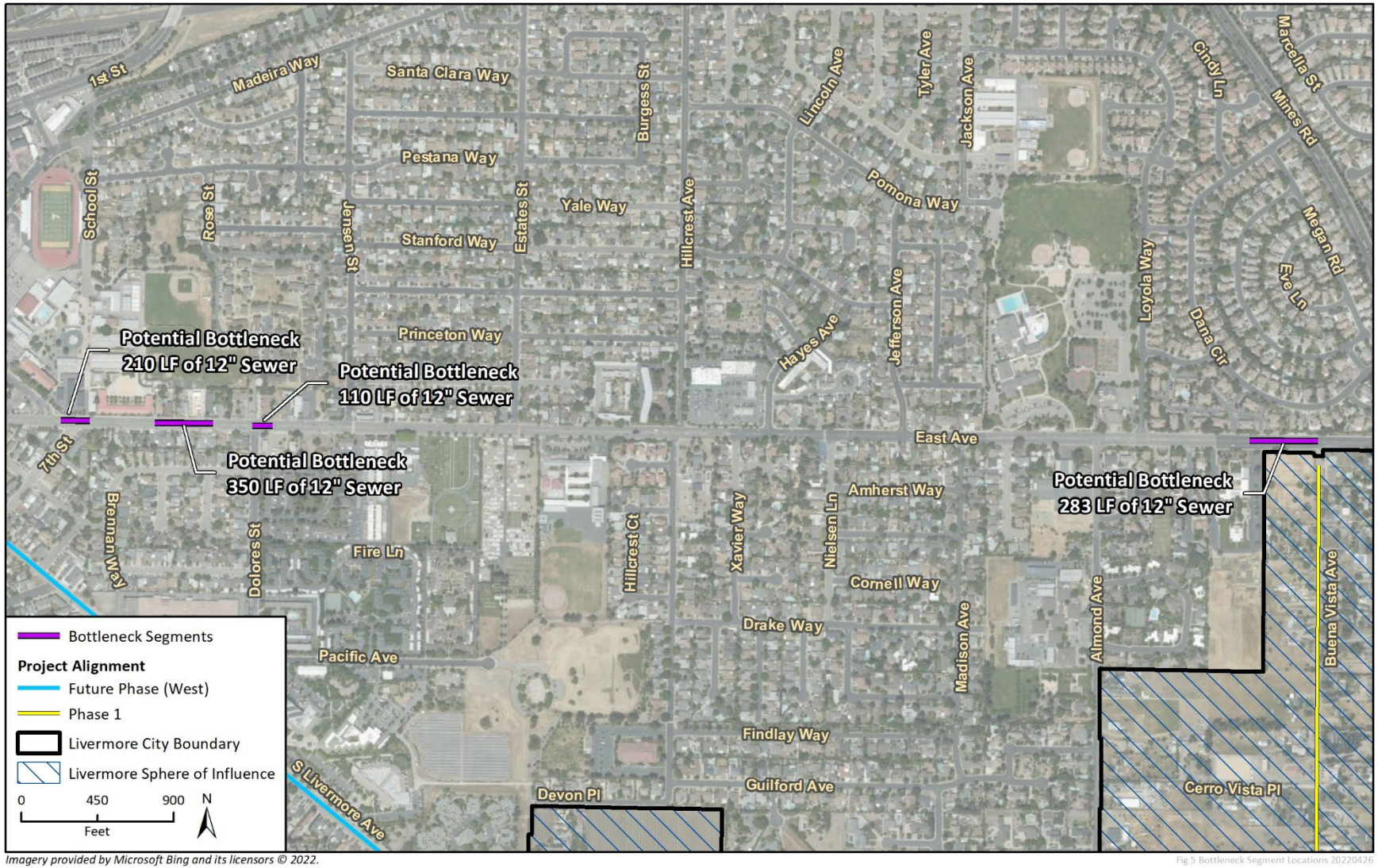

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Fig 5 Bottleneck Segment Locations 20220426

Daily construction tasks would include excavation/grading, installing pipe, backfilling, patching pavement, and coordinating traffic control. Once an area is complete, final paving would be installed over the trench. Approximately 20 feet of width in the daily work area would be required. There is approximately 40 feet of pavement width on South Livermore Avenue, Tesla Road, Buena Vista Avenue, and Greenville Road. Therefore, construction would either require one-way traffic around the active work zone with one bike lane open, or two-way traffic without a bike lane. Once an area is completed, final paving over the trench and one foot beyond the trench would be installed. The County may require the entire road to be slurry sealed. The project would not increase the total impervious area.

In accordance with the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), the proposed project would implement a Stormwater Pollution Prevention Plan (SWPPP) that would include the use of best management practices (BMPs) during project construction. The project would require approximately 27,000 cubic yards of excavation, of which approximately 26,400 cubic yards would be used as backfill. Approximately 2,140 cubic yards of asphalt is anticipated to be exported. The Bottleneck Project may require roadway closures similar to the expansion project, and construction staging would occur on an adjacent property.

9. Project Setting and Surrounding Land Uses

The project alignment is currently fully developed and would take place within existing paved rights-of-way. The alignment is predominately flat, with a gentle slope from approximately 510 feet above mean sea level (amsl) at the northwestern portion of the project alignment at the intersection of South Livermore Avenue and East Avenue to approximately 720 feet amsl at the southeastern portion of the project alignment at the intersection of Tesla Road and Greenville Road. The alignment generally drains from the southeast to the northwest. The Bottleneck Project alignment is also predominately flat and currently a fully developed roadway and the project would take place within existing paved rights-of-way.

The SLVSP includes two Subareas (1 and 2) that are located adjacent to the project alignment. Subarea 1 is described as including horse ranches, the Stivers Academy elementary school, and Rios-Lovell Winery in the SLVSP, and is located north of the project alignment along Tesla Road east of South Vasco Road. Subarea 1 has since been developed with single-family residences, with the existing vineyard and winery still present within the subarea. Subarea 2 is described as including vineyards in the SLVSP, and is located north of the project alignment along Tesla Road between Buena Vista Avenue and South Vasco Road. Subarea 2 has since been developed with residences along Buena Vista Avenue and single-family residences surrounding the Bruno Canziani Neighborhood Park, with vineyards and wineries still present adjacent to Tesla Road and between the Buena Vista residences and Bruno Canziani neighborhood.

Figure 2 shows the project alignment and surrounding land uses, which are primarily residential and agriculture, located directly along the alignment. The parcels directly bordering South Livermore Avenue and Tesla Road are in active agricultural uses (viticulture). Several parcels that directly border Buena Vista Avenue and Greenville Road are residential uses. Parcels located adjacent to the project alignment are zoned as PD - SLVSP with a General Plan designation of SLVSP. The nearest school, Livermore High School, is located adjacent to the Bottleneck Project on East Avenue.

10. Other Public Agencies Whose Approval is Required

The City of Livermore is the lead agency for the CEQA documentation and process. The modified UGB language must be approved by the voters of the City of Livermore.

Required Approvals

The project would require the following approvals from the City of Livermore:

- City Council certification of a Supplemental EIR prepared in accordance with CEQA prior to approving the modified UGB language.
- City Council approval of language to modify the UGB and place on the ballot.

The project would also require the following:

- Approval of the modified UGB language by a majority of voters.

The project would require the following approvals from the County of Alameda:

- Encroachment Permit
- Traffic Control Plan

Following project completion, individual properties would require subsequent approvals including permitting and service agreements with the City subject to Alameda County Local Agency Formation Commission approval, County, and/or Livermore-Amador Valley Water Management Agency, prior to connection to the wastewater system.

11. Have California Native American Tribes Traditionally and Culturally Affiliated with the Project Area Requested Consultation Pursuant to Public Resources Code Section 21080.3.1?

In accordance with Public Resources Code (PRC) Section 21080.3.1, the City sent consultation request letters to two tribes (Amah Mutsun Tribal Band of Mission San Juan Bautista and Ione Band of Miwok Indians).

Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that requires further study beyond the impacts identified in the certified 1997 EIR, as indicated by the checklist on the following pages. The checklist is a modified version of the CEQA Guidelines Appendix G Initial Study checklist, based on evaluating the need for supplemental CEQA documentation under CEQA Guidelines Section 15162, and oriented to identifying topics requiring further analysis in a Supplemental EIR. The following impact areas were determined to have at least one impact identified as "Potentially Significant" or "Less than Significant with Mitigation Incorporated" where new mitigation not included in the 1997 EIR is required:

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
■ Biological Resources	■ Cultural Resources	☐ Energy
■ Geology and Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
■ Hydrology and Water Quality	☐ Land Use and Planning	☐ Mineral Resources
■ Noise	☐ Population and Housing	☐ Public Services
☐ Recreation	☐ Transportation	■ Tribal Cultural Resources
■ Utilities and Service Systems	☐ Wildfire	■ Mandatory Findings of Significance

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

■ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. A SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Andy Ross, Senior Planner

4/20/22
Date

Environmental Checklist

1 Aesthetics

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Except as provided in Public Resources Code Section 21099, would the project:						
a.	Have a substantial adverse effect on a scenic vista?	EIR Pages 4.8-10 through 4.8-27	No	No	No	N/A
b.	Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	EIR Pages 4.8-10 through 4.8-27	No	No	No	N/A
c.	Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	EIR Pages 4.8-10 through 4.8-27	No	No	No	N/A
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	EIR Pages 4.8-10 through 4.8-27	No	No	No	N/A

1997 EIR Summary

Chapter 4.8 (Visual and Aesthetic Quality) of the 1997 EIR analyzes the existing SLVSP's impacts on visual quality. Visual impacts identified in the 1997 EIR are summarized as follows:

- **Subarea 1**: The EIR finds that no new development is considered for areas with high sensitivity. Therefore, it determines that this impact on scenic views would be less than significant.
- **Subarea 2**: The EIR states that development in the area would be consistent with the existing visual quality in the area. Therefore, it determines that this impact on scenic views would be less than significant.

The 1997 EIR determined that aesthetic impacts in Subareas 1 and 2 would be less than significant.

Setting

The alignment is primarily surrounded by residential development and maintained grassy lots with scattered trees along Buena Vista Avenue; residential development, commercial development, vineyards and wineries, and open space along South Livermore Avenue; vineyards and wineries, and residential development along Tesla Road; and vineyards and wineries along Greenville Road. There are distant views of Altamont Hills, located east of Livermore, and the Diablo Mountain Range, located north, south, and east of Livermore, from South Livermore Avenue and Tesla Road. The City's General Plan identifies such views as one of the primary visual characteristics and amenities of the City, and the General Plan includes both South Livermore Avenue and Tesla Road as Major Streets on the City's Planned Scenic Routes Map (City of Livermore 2015). The project alignment is approximately 1.6 miles south of the nearest eligible state scenic highway, I-580 (Caltrans 2021).

Regulatory Setting

City of Livermore General Plan 2003-2025

The City's General Plan Land Use and Community Character Elements both contain goals and policies regarding to the City's scenic qualities. Specifically, Goal LU-15 aims to preserve South Livermore's unique rural and scenic qualities (City of Livermore 2015). Goal CC-4 encourages protection and enhancement of public views within and from established scenic routes. Policy CC 4.6 P1 suggests that landscaping be maintained in scenic route corridors to provide added visual interest, to frame scenic views, and to screen unsightly views. Policy CC 4.7 P2 encourages new, relocated, or existing utility distribution lines be placed underground wherever feasible. Objective CC-4.14 outlines the control of removal of vegetation along scenic routes (City of Livermore 2015).

Impact Analysis

a. Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is usually defined as a panoramic view from an elevated position or a long-range view from a public vantage point. This can include views of natural features or of the built environment, when architecture and landscaped boulevards offer high-value views of an area considered important to the sense of place. Although South Livermore Road and Tesla Road are identified as Scenic Routes by the City, the project would not impact the distant views of Altamont Hills and the Diablo Mountain Range from these roads as the project would not involve aboveground improvements. The project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. Therefore, the project would not have a substantial adverse effect on a scenic vista and there would be no impact. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The project alignment is located approximately 1.6 miles south of the nearest eligible state scenic highway, I-580. The project alignment is not visible from I-580. The project would not damage, nor require removal of, scenic resources such as trees, rock outcroppings, or historic buildings, none of which exist in the proposed area of disturbance (existing paved roadway alignments). Therefore, the proposed project would not damage scenic resources within a state scenic highway and there would be no impact. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The project would be below grade and would not result in new or substantially altered visual or aesthetic conditions. Additionally, the project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. The project would not conflict with current applicable zoning or other regulations governing scenic qualities, such as Goal LU-6 in the City's General Plan Land Use Element that ensures development minimizes potential visual impacts, Objective LU-6.1 that encourages development that does not detract from the scenic character of Livermore, and Goal LU-15 that specifically aims to preserve South Livermore's unique rural and scenic qualities (City of Livermore 2015). The project would be consistent with applicable zoning and other regulations governing scenic quality, and no aesthetic impacts would occur. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The project would not create additional permanent sources of light or glare; therefore, no permanent adverse effects to daytime or nighttime views in the area would occur. Additionally, the project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. Construction would take place during daytime hours as required by the Livermore Municipal Code (LMC) Chapter 9.36, with the potential for limited nighttime construction during the winter months; therefore, the construction of the proposed project would not result in extended periods of time where construction lighting would affect road users and sensitive receptors adjacent to the project alignment. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

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2 Agriculture and Forestry Resources

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:						
a.	Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	EIR Page 4.1-24 through 4.1-26	No	No	No	N/A
b.	Conflict with existing zoning for agricultural use or a Williamson Act contract?	EIR Page 4.1-27 through 4.1-28	No	No	No	N/A
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	N/A	No	No	No	N/A
d.	Result in the loss of forest land or conversion of forest land to non-forest use?	N/A	No	No	No	N/A
e.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	EIR Page 4.1-24 through 4.1-26 and 4.1-35 through 4.1-42	No	No	No	Yes

1997 EIR Summary

Chapter 4.1 (Land Use) of the 1997 EIR analyzes the existing SLVSP's agriculture and forestry impacts. The 1997 EIR does not address the issues related to forest land or timberland. The 1997 EIR determined that agriculture impacts would be less that significant in Subareas 1 and 2, with mitigation required for potential urban-residential conflicts in these subareas. Agricultural resources mitigation measures that were incorporated in the 1997 EIR to reduce potentially significant impacts are summarized below:

Mitigation Measures 4.5-1(a)

The package of actions the City plans to consider at the same time as the Draft Plan includes a right-to-farm ordinance. The ordinance currently encourages dispute resolution methods to address any significant conflicts. The ordinance should be modified to require that an Information Officer be designated by each developer to formalize communications between homeowners and agriculturists. The role of the Information Officer should include at a minimum:

- Responsibility for organizing periodic briefings on agricultural activities.
- Responsibility for receiving grievances related to use conflicts in the South Valley.
- Responsibility for coordinating and facilitate meetings between homeowner associations and agriculturalists so that there is ongoing communication between these groups.
- Responsibility for preparing a quarterly newsletter describing what activities are upcoming in the vineyard and agricultural areas.
- Responsibility for developing a brochure which describes the role of the Information Officer and provides telephone and facsimile numbers for grievances or information requests. The brochure should be provided to new homeowners prior to close of escrow.

In the event of a conflict between a homeowner and an adjacent use, the Information Officer's responsibilities would include:

- Obtaining a clear understanding of the conflict
- If the agricultural operation is within typical agricultural practices, the Information Officer would explain the operation including equipment, the reason for the operation and likely duration of the operation to the resident.
- If the agricultural operation is performing activities which are not consistent with typical agricultural practices the Information Officer will contact the operator. If after discussion the Information Officer is not satisfied that typical agricultural practices are being followed, the Officer shall contact the City of Livermore. The City would be responsible for enforcing applicable policies and ordinances.
- In the event that either the agricultural operation or the resident is located in the County, the County's right-to-farm ordinance and grievance procedures would apply.

Periodic briefings should correspond to cyclical agricultural activities (e.g., spraying, harvesting, etc.) that have the potential to create a nuisance to nearby homeowners. Such briefings and meetings should be held at least twice a year (more if significant grievances are being communicated to the Information Officer).

The ordinance should modify the distance of the right-to-farm deed restrictions. This modification would change the distance of 1,000 feet presently provided by the draft ordinance to a distance of 2,000 feet. This latter distance exceeds the width of the urban shadow which agriculturists generally estimate extends beyond urbanized areas into farmland.

Mitigation Measures 4.5-1(b)

Amend the Draft Plan to encourage assembly or consolidation of potential agricultural land and/or for coordinated long-term agricultural operations on those parcels. The latter could be accomplished through leases by single farmers within individual subareas to plant, manage, and

harvest agricultural mitigation land located within the SLVSPA, and could be accomplished as part of the review of the required eight-year maintenance contract.

Setting

Roadways within the City of Livermore do not have a zoning or land use designation. However, most parcels adjacent to the project alignment are currently zoned by the City as PD-SLVSP along with one adjacent parcel zoned as Education and Institutions (E), one adjacent parcel zoned as Open Space Agricultural (OS-A), and one adjacent parcel zoned as South Livermore Valley Agricultural (SLV-AG) (City of Livermore 2015). Parcels in the project vicinity are zoned by Alameda County as Agriculture, Single Family Residential, and Planned Development (County of Alameda 2021). However, the proposed alignment is developed as a roadway.

The California Department of Conservation (DOC) manages the Farmland Mapping and Monitoring Program to assess and record suitability of land for agricultural purposes. In each county, the land is analyzed for soil and irrigation quality. The highest quality land is designated as Prime Farmland. The DOC lists the project alignment as entirely Urban and Built-Up Land. However, adjacent parcels in the vicinity of the project alignment are designated as Farmland of Statewide Importance, Prime Farmland, Unique Farmland, Grazing Land, Urban and Built-Up Land, and Other Land (DOC 2016).

Regulatory Setting

PRC Section 12220(g) defines forest land as:

> land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

PRC Section 4526 defines timberland as:

> land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis.

Government Code Section 51104(g) defines a timberland production zone as:

> "an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h)."

Impact Analysis

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The project alignment is located adjacent to lands classified as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (DOC 2016). However, the project would be constructed entirely within existing paved rights-of way and would not require additional ground disturbance in adjacent agricultural or other natural areas. The project would not induce unanticipated growth in

the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. As such, no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be affected by project implementation and no impact would occur. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

Multiple parcels adjacent to the project alignment are enrolled under the California Land Conservation Act and are subject to a Williamson Act contract as Prime Agricultural Land and Non-Prime Agricultural Land (DOC 2015a). Similarly, parcels alongside the project alignment are zoned by the City as both Open Space Agricultural and South Livermore Valley Agricultural, while other parcels adjacent to the project alignment are zoned by the County as Agriculture (City of Livermore 2015; County of Alameda 2021). However, the project would only extend sanitary sewer lines along existing paved roadways, which are not subject to Williamson Act contracts and do not have zoning designations or land use designations. The project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. Therefore, the project would not conflict with existing zoning for agricultural use or a Williamson Act contract and no impact would occur. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project alignment and surrounding areas are not designated as, nor adjacent to lands zoned for forest land, timberland, or timberland zoned for Timberland Production (CDFW 2021). Therefore, the project would not conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned for Timberland Production; result in the loss of forest land; or convert forest land to non-forest use and no impact would occur. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

The project would not directly or indirectly result in the conversion of farmland or forestland adjacent to the project alignment to non-agricultural use or non-forest use. The project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. Therefore, the project

would not result in the conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. There would be no impact. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

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3 Air Quality

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:						
a.	Conflict with or obstruct implementation of the applicable air quality plan?	N/A	No	No	No	N/A
b.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	EIR Pages 4.6-5 through 4.6-6	No	No	No	Yes
c.	Expose sensitive receptors to substantial pollutant concentrations?	EIR Pages 4.6-5 to 4.6-8	No	No	No	Yes
d.	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	EIR Page 4.6-9	No	No	No	Yes

1997 EIR Summary

Chapter 4.6 (Air Quality) of the 1997 EIR analyzes the existing SLVSP's air quality impacts. This chapter does not address the issues of conflicts with air quality plans. The 1997 EIR determined that air quality impacts related to carbon monoxide from buildout under the SLVSP would be less that significant. All other air quality impacts were determined to be potentially significant or significant and unavoidable in Subareas 1 and 2. Air quality mitigation measures that were incorporated in the 1997 EIR to reduce potentially significant impacts are summarized below.

Mitigation Measures 4.6-1(a)

In order to mitigate potentially significant construction dust impacts, the City should require implementation of the BAAQMD's following basic construction dust control measures as conditions of approval for all individual development projects or infrastructure improvement contracts in the SLVSPA:

- Water all active areas at least twice daily
- Pave, apply water three times daily, or apply non-toxic soil stabilizer on all unpaved roads, parking areas, and staging areas at construction sites
- Sweep paved access roads, parking areas, and staging areas at construction sites daily with water sweepers

- Sweep streets daily with water sweepers, if visible soil material is carried onto adjacent public streets

Mitigation Measures 4.6-1(b)

In order to mitigate potentially significant construction dust impacts at construction sites larger than four acres in size, the City should also require implementation of the BAAQMD's enhanced construction dust control measures as conditions of approval for those projects:

- Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or longer)
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.)
- Limit traffic speeds on unpaved roads to 15 miles per hour
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways
- Replant vegetation in disturbed areas as quickly as possible
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour

Mitigation Measure 4.6-3

The Draft Plan would provide off-street trail corridors to accommodate separate bicycle/pedestrian and equestrian use. The trail system would be an amenity for SLVSPA residents and visitors. Use would be primarily recreational and, therefore, would have only a minimal effect in reducing vehicle trips from SLVSPA land uses.

The generally low-density, predominantly residential, and semi-rural nature of SLVSPA development under the Draft Plan would severely limit available mitigation strategies to reduce trip generation. Therefore, the City should provide information to encourage individual residential development projects in all subareas to:

- Wire each housing unit to allow use of emerging electronic communication technology to encourage home employment
- Provide electrical recharge outlets in residential garages for electric cars

Residences include a number of intermittent air pollutant sources. Therefore, the City also should encourage the following measures for individual residential development projects in all subareas:

- Limit the number of fireplaces in residences to one per household and / or use EPA-certified wood stoves, pellet stoves, or fireplace inserts in housing units. EPA-certified fireplaces and fireplace inserts are 70 to 90 percent effective in reducing emissions from this source. Also encourage the use of natural gas fired fireplaces.
- Provide outdoor electrical outlets at residences to allow use of electrical lawn and landscape maintenance equipment
- Make natural gas available in residential backyards to allow use of natural gas-fired barbecues

Mitigation Measure 4.6-4

- Draft Plan's site planning standards provide 20-foot rear setbacks for residences. This distance is not expected to be sufficient to avoid dust-related impacts where residential development is located east of agricultural operations. In order to mitigate this air quality-land use conflict, the City should require the following measures as conditions of approval for residential development in Subareas 1, 2, 4, and 7:
- Where residential development would occur east of adjacent active agricultural lands, require developer to provide disclosure statements to prospective buyer warning of possible agricultural nuisances (see Mitigation Measure 4.1-5(a) related to the City's pending right-to-farm ordinance)
- Implement Mitigation Measure 4.1-5 (to reduce urban-rural conflicts)

Setting

Overview of Air Pollution

The federal and State Clean Air Acts mandate the control and reduction of certain air pollutants. Under these laws, the United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for "criteria pollutants" and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG),[1] nitrogen oxides (NO_X), particulate matter with diameters of ten microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_X. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (smog).

Air pollutant emissions are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories:

- Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat.
- Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and can also be divided into two major subcategories:

- On-road sources that may be legally operated on roadways and highways.
- Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

[1] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this Initial Study.

Air Quality Standards and Attainment

The project alignment is located in the Livermore – Amador Valley subregion of the San Francisco Bay Area Air Basin (the Basin), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). As the local air quality management agency, BAAQMD is required to monitor air pollutant levels to ensure that the NAAQS and CAAQS are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the USEPA classifies specific geographic areas as "attainment area" or "nonattainment area" for each pollutant. Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. BAAQMD is a designated nonattainment area for the ozone NAAQS and CAAQS, the $PM_{2.5}$ NAAQS and CAAQS, and the PM_{10} CAAQS and is required to prepare a plan for improvement (BAAQMD 2017a). The health effects associated with criteria pollutants for which the Basin is in non-attainment are described in Table 1.

Table 1 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM_{10})	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).
Suspended particulate matter ($PM_{2.5}$)	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma.[1]

[1] More detailed discussion on the health effects associated with exposure to suspended particulate matter can be found in the following documents: USEPA, Air Quality Criteria for Particulate Matter, October 2004.

PM10 = particulate matter 10 microns in diameter or less; PM2.5 = particulate matter 2.5 microns or less in diameter

Source: USEPA 2021a

Regulatory Setting

Air Quality Management

The Bay Area 2017 Clean Air Plan (the 2017 Plan) provides a plan to improve Bay Area air quality and protect public health as well as the climate. The legal impetus for the 2017 Plan is to update the most recent ozone plan - the 2010 Clean Air Plan - to comply with state air quality planning requirements as codified in the California Health & Safety Code. Although steady progress in reducing ozone levels in the Basin has been made, the region continues to be designated as non-attainment for both the one-hour and eight-hour ozone CAAQS. In addition, emissions of ozone precursors in the Bay Area contribute to air quality problems in neighboring air basins. Under these circumstances, state law requires the 2017 Plan to include all feasible measures to reduce emissions of ozone precursors (BAAQMD 2017b).

In 2006, the USEPA reduced the 24-hour $PM_{2.5}$ NAAQS regarding short-term exposure to fine particulate matter from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$. Based on air quality monitoring data for the 2006-2008 cycle showing that the region was slightly above the standard, in December 2008 the USEPA designated the Basin as non-attainment for the 24-hour $PM_{2.5}$ NAAQS. This triggered the requirement for the BAAQMD to prepare a State Implementation Plan (SIP) to demonstrate how the region would meet the standard. However, data for both the 2008-2010 and the 2009-2011 cycles showed that $PM_{2.5}$ levels in the Basin currently meet the standard. On October 29, 2012, the USEPA issued a proposed rulemaking to determine that the Basin now meets the 24-hour $PM_{2.5}$ NAAQS. The Basin will continue to be designated as nonattainment for the 24-hour $PM_{2.5}$ NAAQS until such time as the BAAQMD elects to submit a "redesignation request" and a "maintenance plan" to the USEPA, and the USEPA approves the proposed redesignation.

BAAQMD Significance Thresholds

The BAAQMD recommends that lead agencies determine appropriate air quality emissions thresholds of significance based on substantial evidence in the record. The BAAQMD's significance thresholds in the updated May 2017 CEQA Air Quality Guidelines for land use development projects within the Basin are the most appropriate thresholds for use in determining air quality impacts of the proposed project (BAAQMD 2017b). The BAAQMD significance thresholds for criteria air pollutants, shown in Table 2, were used to evaluate the project's potential air quality impacts. Projects that would result in criteria air pollutant emissions below these significance thresholds would not result in a cumulatively considerable net increase in criteria air pollutants for which the Basin is in non-attainment under applicable federal or state ambient air quality standards.

Table 2 Criteria Air Pollutant Significance Thresholds

	Construction Thresholds	Operational Thresholds	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; lbs/day = pounds per day

Source: BAAQMD 2017b

The BAAQMD also provides a preliminary screening methodology to conservatively determine whether a proposed project would exceed CO thresholds. If the following criteria are met, a project would result in a less than significant impact related to local CO concentrations:

- Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

- Project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The BAAQMD has also established screening criteria applicable to projects that would introduce new stationary sources of toxic air contaminants (TAC) emissions. A project would result in significant impacts if TAC emissions would result in an increased cancer risk level of more than 10 in one million or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0.

City of Livermore General Plan 2003 – 2025

The City's Climate Change Element contains policies focused on designing, constructing, and operating new development in a way that reduces potential for future air quality problems, such as Policies 1 through 4 under Objective CLI-1.1, which ensure that best available control technology is used for operations that could generate air pollutants; encourages energy conservation and low-polluting energy sources; promotes landscaping and tree planting to absorb CO and other pollutants; and implements complementary strategies to reduce greenhouse gases (GHG) identified in the Climate Action Plan (CAP). Additionally, Policy 1 under Objective OSC-6.1 of the Open Space and Conservation Element requires that construction and grading practices minimize airborne dust and particulate matter (City of Livermore 2015).

Methodology

Air pollutant emissions generated by project construction were estimated using the Sacramento Metropolitan Air Quality Management District (SMAQMD) Road Construction Emissions Model, Version 9.0.0. This model utilizes project-specific information including the project type, construction time, project area, and project location to model a project's construction emissions. The analysis reflects project construction and operation as described under Initial Study Section 9, *Project Description*. Model inputs and calculations are included in Appendix AQ.

Construction

Construction emissions modeled include emissions generated by construction equipment used along the alignment and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. Construction would begin in January 2024 and would last for approximately 12 months with an assumption that there would be 22 working days per month. The construction equipment list used in the model was based on project-specific information, and it was assumed to be diesel-powered.

Operational Emissions

While the conveyance of wastewater and additional wastewater treatment demand would require an incremental increase in energy demand at the Livermore Water Reclamation Plant, the air quality emissions associated with the additional energy demand would be within the BAAQMD permitted thresholds for the Livermore Water Reclamation Plant, and the project would not generate more emissions than existing conditions. No buildings would be constructed, as the project would only serve existing development potential consistent with the vision of the General Plan and SLVSP. Similarly, the project would not result in unanticipated growth beyond the current vision of the General Plan and SLVSP in the vicinity. As a result, no change to existing operations would result from the project, and a quantitative analysis of operational emissions is not included.

Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The California Clean Air Act requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted applicable air quality plan is the BAAQMD's 2017 Plan. As described in the *Air Quality Management* Section, the 2017 Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan. Pursuant to air quality planning requirements, the 2017 control strategy includes feasible measures to reduce emissions of ozone precursors – ROG and NO_x. The 2017 Plan does not include control measures that apply directly to individual development projects. Instead, the control strategy includes measures related to specific emissions sectors.

Under BAAQMD's methodology, a determination of consistency with the 2017 Plan should demonstrate that a project:

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

A project that would not support the 2017 Plan's goals would not be considered consistent with the 2017 Plan. On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the 2017 Plan's goals. In addition, applicable control measures such as green building construction, waste diversion, and water conservation would indicate support for the clean air plan goals on an individual project basis.

The project would not generate new operational emissions and construction activities would create temporary emissions that would cease upon completion of the project. Furthermore, as described under *criterion b*, construction activities would adhere to 2017 Plan control measures and construction-related emissions would not exceed the applicable BAAQMD significance thresholds. Therefore, the proposed project, consistent with the BAAQMD's CEQA thresholds, would not conflict with or obstruct the implementation of the 2017 Plan. This impact would be less than significant and this topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Construction activities such as the use of construction vehicles and equipment, trenching, and disturbance of stockpiled soils have the potential to generate fugitive dust (PM_{10}) through the exposure of soil to wind erosion. Exhaust emissions associated with heavy construction equipment could contribute to the degradation of regional air quality. Air pollutant emissions associated with project construction and operation are discussed in the following subsections.

Construction Emissions

CRITERIA AIR POLLUTANT EMISSIONS

Table 3 summarizes the estimated maximum daily emissions of pollutants during project construction. As shown therein, construction-related emissions would not exceed BAAQMD thresholds. Therefore, project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. This impact would be less than significant and this topic will not be discussed in the Supplemental EIR. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR.

Table 3 Estimated Average Daily Construction Emissions (lbs/day)

	ROG	NO_X	Exhaust PM_{10}	Exhaust $PM_{2.5}$
2024	2	24	1	1
BAAQMD Thresholds	**54**	**54**	**82**	**54**
Threshold Exceeded?	No	No	No	No

ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; lbs/day = pounds per day; BAAQMD = Bay Area Air Quality Management District

Notes: All emissions modeling was completed using the SMAQMD Road Construction Emissions Model. See Appendix AQ for model output results. Some numbers may not add up due to rounding.

FUGITIVE DUST

Site preparation and grading/excavation may cause wind-blown dust that could contribute particulate matter into the local atmosphere. BAAQMD has not established a quantitative threshold for fugitive dust emissions but rather states that projects that incorporate BMPs for fugitive dust control during construction, such as watering exposed surfaces and limiting vehicle speeds to 15 miles per hour, would have a less than significant impact related to fugitive dust emissions. The project would be required to include implementation of these BMPs consistent with Objective OSC-6.1 Policy 1 in City's General Plan (2015); therefore, construction-related fugitive dust emissions would be less than significant and this topic will not be discussed in the Supplemental EIR. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR.

Operational Emissions

Project operation would not increase energy use in the form of electricity, natural gas, or gasoline and diesel fuel consumption. No buildings would be constructed, no vehicle traffic would be generated, and the project would not result in unanticipated growth in the vicinity. As such, no change to existing operations is expected to result from the project. Project operation would not result in a cumulatively considerable net increase of ROG, NO_X, PM_{10}, or $PM_{2.5}$ emissions, and impacts would be less than significant. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Certain population groups, such as children, the elderly, and people with health problems, are particularly sensitive to air pollution. Sensitive receptors are defined as schools, hospitals, and residences. Sensitive receptors in the project vicinity include single family residences located approximately 50 feet from the project alignment on Tesla Road, South Livermore Avenue, and Buena Vista Avenue. The following subsections evaluate the potential for these sensitive receptors to be exposed to substantial concentrations of CO and TACs.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the national one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (CARB 2021a).

As mentioned in the *BAAQMD Significance Thresholds* subsection above, BAAQMD has a set of screening criteria to use as the first step to evaluate whether a project would result in the generation of CO concentrations that would substantially contribute to an exceedance of BAAQMD thresholds.

The proposed project would not result unanticipated growth beyond the current vision of the General Plan and SLVSP in the vicinity. Average daily traffic on roadways in the project vicinity would not change. The project would not result in a CO hotspot and impacts would be less than significant.

TACs

Project construction and operation would generate emissions of TACs, which are defined by California law as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. Diesel particulate matter (DPM) was identified as a TAC by CARB in 1998 (CARB 2021b). The potential cancer risk from the inhalation of DPM outweighs the potential non-cancer health impacts (CARB 2021b) and is therefore the focus of this analysis. The following subsections discuss the potential for the project to generate TAC emissions during construction and operation.

CONSTRUCTION IMPACTS

Construction-related activities would result in temporary emissions of DPM exhaust emissions from off-road, heavy duty diesel equipment, including excavators, backhoes, front loaders, dump trucks, and shoring and paving equipment. Generation of DPM from construction typically occurs in a single area for a short period. Project construction would occur over approximately 12 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure period (Office of Environmental Health Hazard Assessment 2015); however, such assessments should be limited to the period/duration of activities

associated with the project. Thus, the duration of proposed construction activities (i.e., 12 months) is approximately 1.4 percent of the total exposure period used for health risk calculation. Current models and methodologies for conducting health-risk assessments are associated with longer-term exposure periods of 9, 30, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities, resulting in difficulties in producing accurate estimates of health risk (BAAQMD 2018).

PM_{10} exhaust emissions are often used as a surrogate for DPM. The maximum PM_{10} exhaust emissions would occur during grading/excavation activities. Site preparation would occur for a short amount of time each day, as the linear project requires each phase of construction activity to occur for each segment of the project undertaken at a time. PM_{10} emissions would decrease for the remaining construction phases because other construction activities would require less construction equipment. While the maximum DPM emissions associated with site preparation activities would only occur for a portion of each day, these activities represent the maximum exposure condition for the total construction period. The duration of site preparation activities would represent less than 1 percent of the total exposure period for a 30-year health risk calculation. Therefore, DPM generated by project construction would not create conditions where the probability is greater than 10 in 1 million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual. This impact would be less than significant and this topic will not be discussed in the Supplemental EIR. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR.

OPERATIONAL IMPACTS

The Bay Area contains urban or industrialized communities where the exposure to TACs is relatively high. According to the BAAQMD CEQA Air Quality Guidelines and the Community Air Risk Evaluation Program, the project alignment is located in an impacted community, which is defined as an area with elevated pollution levels based on detailed emissions inventories and air dispersion modeling that the BAAQMD has identified as impacted (BAAQMD 2017b; BAAQMD 2018). Sources of TACs include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities.

The project would not result in unanticipated growth beyond the current vision of the General Plan and SLVSP in the vicinity. As such, no change to existing operations is expected to result from the project. Therefore, project operation would not expose sensitive receptors to substantial TAC emissions. Impacts would be less than significant and this topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling. However, these odors would be intermittent and temporary and would cease upon completion, and odors disperse with distance. Overall, project construction-related impacts of other emissions would be less than significant. Additionally,

development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR.

Table 3-3 in the BAAQMD's 2017 CEQA Guidelines provides odor screening distances for land uses that have the potential to generate substantial odor complaints. Typical odor-generating land uses include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2017b). The proposed project does not include any of the uses identified by the BAAQMD as odor-generating uses. Therefore, the proposed project would not generate objectionable odors that would affect a substantial number of people. This impact would be less than significant and this topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

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4 Biological Resources

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	EIR Pages 4.4-36 through 4.4-39	No	No	No	N/A
b. 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?	EIR Pages 4.4-34 through 4.4-39	No	No	No	N/A
c. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	EIR Pages 4.4-34 through 4.4-36	No	No	No	N/A
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	EIR Pages 4.4-31 through 4.4-34	No	No	No	N/A
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	EIR Pages 4.4-27 through 4.4-31	No	No	No	N/A
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	N/A	No	No	No	N/A

1997 EIR Summary

Chapter 4.4 (Biological Resources) of the 1997 EIR analyzes the existing SLVSP's biological resources impacts. The 1997 EIR does not address the issues of conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. The 1997 EIR determined that biological resources impacts related to loss of non-native grassland and agricultural cover, disturbance to wetlands and other waters, and modification and elimination of habitat for special-status species would be less that significant. Furthermore, all other impacts were determined to be less than significant. As a result, biological resources mitigation measures were not required.

Setting

The project alignment is developed and there are no trees or other notable vegetation within it. The City may lease space from adjacent property owners for construction staging and worker parking.

Regulatory Setting

Regulatory authority over biological resources is shared by federal, state, and local authorities under a variety of statutes and guidelines. Primary authority for general biological resources lies with the land use control and planning authority of local jurisdictions. The California Department of Fish and Wildlife (CDFW) is a trustee agency for biological resources throughout the state under CEQA and has direct jurisdiction under the Fish and Game Code of California. Under the federal and state Endangered Species Acts, the CDFW and the United States Fish and Wildlife Service (USFWS) also have direct regulatory authority over species formally listed as Threatened or Endangered. The United States Army Corps of Engineers has regulatory authority over specific biological resources, namely wetlands and waters of the U.S., under Section 404 of the Federal Clean Water Act (CWA).

Plants or animals may be considered "special-status" due to declining populations, vulnerability to habitat change, or restricted distributions. Special-status species are classified in a variety of ways, both formally (e.g., federal and state Threatened and Endangered Species) and informally ("Special Animals"). Species may be formally listed and protected as Threatened or Endangered by the CDFW or USFWS or as California Fully Protected. Informal listings by agencies include California Species of Special Concern (SSC) a broad database category applied to species, roost sites, or nests, or as USFWS Candidate taxa. CDFW and local governmental agencies may also recognize special listings developed by focal groups (i.e., Audubon Society Blue List, California Native Plant Society Rare and Endangered Plants, U.S. Forest Service regional lists). California Fish and Game Code Section 3503.5 specifically protects birds of prey, and their nests and eggs, against take, possession, or destruction, and Section 3503 incorporates restrictions imposed by the federal Migratory Bird Treaty Act with respect to migratory birds.

City of Livermore General Plan 2003 – 2025

The City of Livermore's General Plan includes goals and policies within its Open Space and Conservation Element which are relevant to biological resources. General Plan Goal OSC-1 aims to maintain biodiversity within the city with special emphasis on species that are sensitive, rare, declining, unique or represent valuable biological resources. In addition, Goal OSC-2 aims to conserve Livermore's waterways, tributaries and associated riparian habitats. General Plan Objective OSC-1.3 contains language that discourages tree removal and encourages tree preservation.

City of Livermore Municipal Code

LMC Chapter 12.20 outlines the City's tree ordinance with regards to street trees. LMC Section 12.20.030 states that it is unlawful for a person to plant, remove, prune, injure, or destroy any street tree. In order to remove or replace a tree, a person must put in an application to the Superintendent as stated in LMC Sections 12.20.050 and 12.20.080.

Impact Analysis

a. Would the project 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?

Special-Status Plants

Using the BIOS viewer (CDFW 2022), it was determined that one special status plant species is present in the Livermore quad. This includes palmate-bracted bird's-beak (*Chloropyron palmatum*) (CDFW 2022). However, the highly disturbed conditions and the lack of soil due to paved surfaces and native vegetation communities preclude the potential for rare plants to occur within the alignment. The project alignment is entirely within previously disturbed and paved rights-of-way. The project would not require ground disturbance in previously undisturbed areas. Given these factors, no special status species have the potential to occur within the project alignment. Therefore, the project would not result in impacts to special-status plant species.

Special-Status Wildlife

Using the BIOS viewer (CDFW 2022), it was determined that five special status animal species are present in the Livermore quad. This includes the California tiger salamander (*Ambystoma californiense*), foothill yellow-legged frog (*Rana boylii),* bald eagle *(Haliaeetus leucocephalus*), tricolored blackbird (*Agelaius tricolor*), and the San Joaquin kit fox (*Vulpes macrotis mutica*) (CDFW 2022). However, the alignment is highly disturbed, fully paved roadway. Vegetation along the project alignment is limited to ornamental plantings and isolated patches of ruderal vegetation that occur on the sides of the roadway that are regularly disturbed by human activity, including through pedestrian and vehicle use. The alignment has no natural or native vegetation communities that would support special-status wildlife. For those select few special-status species that occur in disturbed or ruderal areas (such as burrowing owl), the alignment is sufficiently isolated from existing natural areas, and surrounded with agricultural, residential, and commercial development, that wildlife access to the alignment is substantially restricted. The nearest natural area is Robertson Park, located approximately 0.3 mile southwest from the project alignment. Due to its disturbed nature, the alignment is not considered viable to support federal or state listed species or other special-status wildlife.

A desktop review of the project alignment determined that vegetation observed along the project alignment and vicinity are primarily non-native, ornamental, and/or disturbed; however, the alignment could be used by numerous species of migratory birds that utilize sparse ground cover or ornamental shrubs and landscaping as nesting habitat. Migratory or other nesting birds, while not designated as special-status species, are protected by the California Fish and Game Code Section 3503 and the Migratory Bird Treaty Act. Ornamental trees and shrubs and human-made structures alongside the project alignment could provide habitat for nesting birds. If nests are present and

project construction activities occur during the nesting season (typically February 1 through August 31), impacts to nesting birds, including raptors, would be potentially significant. Potential impacts to nesting birds, including raptors, would be reduced to less than significant level through implementation of Mitigation Measure BIO-1, described below.

Mitigation Measure

BIO-1 Nesting Bird Avoidance and Minimization Efforts

If project construction activities occur during the nesting season (between February 1 and August 31), a qualified biologist shall conduct a pre-construction survey for nesting birds no more than 14 days prior to construction. The survey shall include the entire project alignment and a 300-foot buffer to account for nesting raptors. If nests are found, the qualified biologist shall establish an appropriate species-specific avoidance buffer of sufficient size to prevent disturbance by project activity to the nest (up to 300 feet for raptors, up to 150 feet for other birds). The qualified biologist shall perform at least two hours of pre-construction monitoring of the nest to characterize "typical" bird behavior.

During construction, active nests identified during the pre-construction survey shall be monitored by the qualified biologist to determine if construction activities are causing disturbance to the bird and shall increase the buffer if it is determined the birds are showing signs of unusual or distressed behavior associated with project activities. Atypical nesting behaviors that may cause nest abandonment include, but are not limited to, defensive flights, vocalizations directed towards project personnel/activities, standing up from a brooding position, and flying away from the nest. The qualified biologist shall have authority to order the cessation of construction activities if the nesting birds exhibit atypical behavior that may cause nest failure (nest abandonment and loss of eggs and/or young) until a refined appropriate buffer is established. To prevent encroachment, the established buffer(s) shall be clearly marked by high visibility material. The established buffer(s) shall remain in effect until the young have fledged or the nest has been abandoned as confirmed by the qualified biologist. The monitoring biologist shall determine the appropriate protection for active nests on a case-by-case basis using the criteria described above. The qualified biologist shall prepare a nest monitoring report at the time monitoring has been completed. The report will document the methods and results of the monitoring, and the final status of the nest (i.e., successful fledging of the nest, nest depredation, nest failure due to construction activity). The report shall be submitted to the City for approval.

Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds, including raptors, to less than significant levels. This mitigation measure will be listed in the Supplemental EIR's executive summary and included in the project's mitigation monitoring and reporting program. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project 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?

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The project alignment is not located within riparian habitat, sensitive natural communities, or wetland areas. The nearest wetland is located approximately 0.2 miles south of the project alignment. Furthermore, Arroyo Mocho is classified as riverine habitat and is located approximately 260 feet from the project alignment (USFWS 2021). Project construction would not occur within riparian habitat, sensitive natural communities, or protected wetlands. The General Plan includes several goals, objectives and policies that protect such habitats. For example, Policies 1 through 13 under Objective OSC-1.2 require setbacks from sensitive habitats, require protection of riparian woodlands and freshwater marshes, and require project proponents to map sensitive biological and wetland resources (City of Livermore 2015). Because the project would disturb more than 1 acre of land, it would be subject to the NPDES Construction General Permit, which requires implementation of a site-specific SWPPP and BMPs. These BMPs would include erosion and sediment controls, runoff water quality monitoring, and means of waste disposal, all of which would ensure no pollutants or sediments are carried via stormwater runoff from the active project construction area to nearby riparian or wetland features. Thus, the project would not have a substantial adverse effect on riparian habitat, sensitive natural community, or state or federally protected wetlands. No impact would occur and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

d. Would the project 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?

The project alignment is not located directly adjacent to intact wildlife habitat or corridors. The project would not redirect or cause the cessation of steam flows that could interfere with migratory fish species. Land use in the project vicinity is agricultural, residential, and commercial with little connectivity to natural habitats. It is therefore not expected to support wildlife movement. The alignment itself does not contain suitable connected natural areas that would contribute to a migratory wildlife corridor. Furthermore, Policies 9 and 10 under Objective OSC-1.2 in the Open Space and Conservation Element of the General Plan protect corridors from being impacted from development, such as development on adjacent existing wineries and residences that would be served by the project (City of Livermore 2015). No native wildlife nursery sites were identified in the area due to the lack of natural areas. Since the project alignment is not a significant site for wildlife to move or migrate through, no impacts would occur and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposed project would not result in the removal of existing trees along the project alignment. As long as the construction contractor submits a request for the removal and replacement of the street trees in accordance with the LMC, the project would not conflict with local policies or ordinances protecting biological resources. No impacts would occur and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Currently, there are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other habitat conservation plans in the city and county; however, the East Alameda Conservation Strategy does include lands within and adjacent to the City, including the project site. The Conservation Strategy identifies the project alignment as adjacent to Open Space Land Type 3 and 4, which are agricultural and public lands that may have some ecological value. The project would not directly convert adjacent parcels to a different land use and would serve development on adjacent parcels consistent with the City's General Plan and SLVSP. Therefore, the proposed project would have no impact and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

5 Cultural Resources

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	EIR Pages 4.10-9 through 4.10-11	No	No	No	N/A
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	EIR Pages 4.10-7 through 4.10-8	No	No	No	N/A
c. Disturb any human remains, including those interred outside of formal cemeteries?	EIR Pages 4.10-7 through 4.10-8	No	No	No	N/A

1997 EIR Summary

Chapter 4.10 (Cultural Resources) of the 1997 EIR analyzes the existing SLVSP's impacts on cultural resources. The 1997 EIR determined that cultural resources impacts related to historical resources, archaeological resources, and human remains would be less that significant. No mitigation measures were required.

Setting

GPA Consulting (GPA) conducted a Historic Resources Survey Update for the City of Livermore in March 2021. The study consisted of an intensive-level survey and a citywide reconnaissance level survey. The study identified 30 previously unidentified properties that appear eligible for listing on the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR), and that also meet the definition of a City of Livermore historic resource. The study also identified five properties previously listed in the NRHP and CRHR within the GPA survey area. None of the identified properties identified by GPA are within the project alignment.

The study also identified two designated wineries, Wente Brothers Winery and Concannon Winery, within the GPA study area. Both wineries are listed on the CRHR and are located adjacent to the project alignment along Tesla Road. The Wente Brothers Winery, founded in 1883 by C.H. Wente (Wente Vineyards 2022), is located at 5565 Tesla Road and was listed as California Historical Landmark No. 957 in May 1983. Concannon Winery, established in 1883 by James Concannon (Concannon Vineyards 2022), is located at 4590 Tesla Road and was listed as California Historic Landmark No. 641 in April 1958. Both wineries are located approximately 40 feet from Tesla Road.

Rincon Consultants conducted a records search of the California Historical Resources Information System (CHRIS) at the Northwest Information Center (NWIC) for the project alignment on January 6, 2022. The records search identified 29 previously conducted cultural resources studies within a 0.5-

mile radius of the project site, of which seven include portions of the project alignment. The records search also identified one historic-period built environment resource within the 0.5-mile radius of the project site, and no resources within the current project site. The NWIC records search indicated that the project alignment had not been surveyed for cultural resources prior to 2000. Rincon conducted a Phase I archaeological windshield survey of the project alignment and its components due to safety concerns from traffic conditions. The archaeologist drove the alignment three times to ensure that the project was documented for analysis. The archaeologist noted high vehicle and bicycle traffic throughout the project alignment. No archaeological resources were identified during this effort.

Rincon also submitted a Sacred Lands File (SLF) search request to the Native American Heritage Commission (NAHC) on January 17, 2022. The NAHC responded to Rincon's SLF request on February 3, 2022, stating that the results of the SLF search were negative.

Rincon completed a review of historical topographic maps and aerial imagery to ascertain the development history of the project alignment. Historical topographic maps from 1907 to 1941 depict Tesla Road (trending east-west) and South Livermore Avenue (trending northwest-southeast) as paved roadways surrounded by minimal development, likely ranch houses (NETR Online 2022; United States Geological Survey 2022). From 1943 to 1964, historical topographic maps identify residential and road development within the project alignment and the identification of agricultural plots (NETR Online 2022; United States Geological Survey 2022). From 1969 to 1985, further residential and commercial development is depicted surrounding the project alignment, with the project alignment depicted in its current condition from 1985 through 2018 (NETR Online 2022; United States Geological Survey 2022). In addition, aerial imagery, from 1949 through 2018, details the level of disturbance surrounding the project alignment from agricultural use, specifically vineyard growth and expansion, as well as additional residential development (NETR Online 2022).

Regulatory Setting

CEQA requires that a lead agency determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1). A historical resource is a resource listed in, or determined to be eligible for listing, in the CRHR, a resource included in a local register of historical resources, or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CEQA Guidelines Section 15064.5[a] [1-3]).

A resource is considered historically significant if it:

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

If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a], [b]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

City of Livermore General Plan 2003-2025

The City General Plan's Community Character Element contains goals specific to cultural resources. Goal CC-3, along with the Objectives, Policies and Actions therein, specifically aims to "preserve and enhance the City's cultural and historic resources not merely as positive reminders of the past, but also as relevant and unique alternatives for the present and the future–a source of community identity, architecture, and social, ecological and economic vitality" (City of Livermore 2004b).

Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

The two CRHR listed resources, Wente Brothers Winery and Concannon Winery, are recorded adjacent to the project alignment along Tesla Road. The proposed project would not extend into either of the recorded resource boundaries as the project would be constructed entirely within existing paved rights-of-way. Changes to the project alignment would be underground and would not affect the resources. The project would not involve above-ground modification of the existing setting beyond underground utility placement and minor repaving. The project would return the road to a similar condition as before construction. The project would not involve the demolition of existing buildings or structures near the project alignment, nor would contributing features to Wente Brothers Winery and Concannon Winery be changed or impacted. Therefore, no historical resources would be affected. No changes in significance of a historical resource would occur, and no impacts would occur. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

No archaeological resources have been recorded within the project alignment or a 0.5-mile radius of the project alignment. Previous studies within the project vicinity do not identify archaeological resources and indicate that the archaeological sensitivity is low for containing intact archaeological deposits.

The project alignment is paved and has been disturbed by the development of Tesla Road, South Livermore Avenue, Buena Vista Avenue, and Greenville Road; residential development; and the historical agricultural use of the surrounding parcels. Therefore, the project alignment has low sensitivity for containing intact archaeological resources. However, there is always a possibility that previously undiscovered archaeological resources could be encountered during ground disturbance;

therefore, Mitigation Measure CR-1 would be required to address unanticipated discoveries during construction.

Mitigation Measure

CR-1 Unanticipated Archaeological Resources

If archaeological resources are encountered during ground-disturbing activities, work within 50 feet of the find shall be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology shall be contacted immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work, such as data recovery excavation, may be warranted to mitigate any significant impacts to archaeological resources.

Implementation of Mitigation Measure CR-1 would reduce potential impacts on archeological resources to less than significant. This mitigation measure will be listed in the Supplemental EIR's executive summary and included in the project's mitigation monitoring and reporting program. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No known burials or cemeteries are recorded within the project alignment. However, the discovery of human remains is always a possibility during ground-disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access. With adherence to existing regulations, impacts to unanticipated human remains would be less than significant. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

6 Energy

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	N/A	No	No	No	N/A
b. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	N/A	No	No	No	N/A

1997 EIR Summary

The 1997 EIR does not address the issue area of energy.

Setting

As a state, California is one of the lowest per capita energy users in the nation due to its energy efficiency programs and mild climate, followed only by Rhode Island (United States Energy Information Administration 2021). Electricity and natural gas are primarily consumed by the built environment for lighting, appliances, heating and cooling systems, fireplaces, and other uses such as industrial processes in addition to being consumed by alternative fuel vehicles. The project would not use natural gas; therefore, only electricity is described herein. Most of California's electricity is generated in state with approximately 30 percent of energy imported from out of state in 2020 (California Energy Commission [CEC] 2021a). In addition, approximately 33 percent of California's electricity supply in 2020 came from renewable energy sources, such as wind, solar photovoltaic, geothermal, and biomass (CEC 2021a). In 2018, Senate Bill (SB) 100 accelerated the state's Renewable Portfolio Standards Program, codified in the Public Utilities Act, by requiring electricity providers to increase procurement from eligible renewable energy and zero-carbon resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. Electricity service would be provided to the project by Pacific Gas and Electric Company (PG&E). Table 4 summarizes the electricity consumption for Alameda County and PG&E, as compared to statewide consumption.

Table 4 2020 Electricity Consumption

Energy Type	Alameda County	PG&E	California	County Proportion of PG&E Consumption	County Proportion of Statewide Consumption[1]
Electricity (GWh)	10,247	78,519	559,020	13%	2%

GWh = gigawatt-hours
[1] For reference, the population of Alameda County (1,663,114 persons) is approximately 4.2 percent of the population of California (39,648,938 persons) (Department of Finance 2021).
Source: CEC 2021b

Petroleum fuels are primarily consumed by on-road and off-road equipment in addition to some industrial processes, with California being one of the top petroleum-producing states in the nation (CEC 2021c). Gasoline, which is used by light-duty cars, pickup trucks, and sport utility vehicles, is the most used transportation fuel in California with 12.6 billion gallons sold in 2020 (CEC 2021d). Diesel, which is used primarily by heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction and military vehicles, is the second most used fuel in California with 1.7 billion gallons sold in 2021 (CEC 2021d). Table 5 summarizes the petroleum fuel consumption for Alameda County as compared to statewide consumption.

Table 5 2020 Annual Gasoline and Diesel Consumption

Fuel Type	Alameda County (Millions of Gallons)	California (Millions of Gallons)	Proportion of Statewide Consumption[1]
Gasoline	442	12,572	4%
Diesel	52	1,744	3%

[1] For reference, the population of Alameda County (1,663,114 persons) is approximately 4.2 percent of the population of California (39,648,938 persons) (Department of Finance 2021).
Source: CEC 2021d

Energy consumption is directly related to environmental quality in that the consumption of nonrenewable energy resources releases criteria air pollutant and GHG emissions into the atmosphere. The environmental impacts of air pollutant and GHG emissions associated with the project's energy consumption are discussed in detail in Environmental Checklist Section 3, *Air Quality*, and Environmental Checklist Section 8, *Greenhouse Gas Emissions*, respectively.

Regulatory Setting

2017 Bay Area Clean Air Plan

The Bay Area 2017 Clean Air Plan (the 2017 Plan) provides a plan to improve Bay Area air quality and protect public health as well as the climate. The legal impetus for the 2017 Plan is to update the most recent ozone plan - the 2010 Clean Air Plan - to comply with state air quality planning requirements as codified in the California Health & Safety Code. The goals and visions outlined in the 2017 Plan provide a focus on creating energy efficiency and adopting a low-carbon lifestyle through increased use of renewable energy.

City of Livermore General Plan 2003-2025

The City's General Plan Climate Change Element contains goals, policies, and objectives that prioritize energy efficiency. For example, Objective CLI-1.5 aims to expand and adopt new policies and programs that will help to provide energy efficiency alternatives to fossil fuel use and reduce consumption. This Objective is directly supported by policies and actions within the City's General Plan Open Space and Conservation Element, such as Action OSC-7.1 A1 that supports alternative energy sources (City of Livermore 2015).

Impact Analysis

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Project-related energy consumption would include energy consumed during project construction, such as fuel consumed by vehicles and equipment, and operational energy use related to increased wastewater disposal at the Livermore Water Reclamation Plant. No change to existing operations is expected to result from the project, no buildings would be constructed, and the project would not create result in the potential for unanticipated growth in the vicinity. The proposed project would require the use of gasoline and diesel fuel for project construction. The anticipated use of these resources is detailed in the following subsections. Construction details and the SMAQMD Road Construction Emissions Model outputs for the air pollutant and GHG emissions modeling were used to estimate energy consumption associated with the proposed project (Appendix AQ).

Construction Impacts

During project construction, energy would be consumed in the form of petroleum-based fuels used to power and operate heavy-duty equipment and machinery, off-road construction vehicles on the project alignment, construction worker travel to and from the project alignment, and vehicles used to deliver materials. The proposed project would require site preparation, excavation, installation of piping, backfill, patch paving, final paving, and slurry sealing. As shown in Table 6 below, project construction would require approximately 3,076 gallons of gasoline and 74,352 gallons of diesel fuel. These construction energy estimates are conservative because they assume that the construction equipment used in each phase of construction is operating every day of construction.

Table 6 Proposed Project Construction Energy Usage

	Fuel Consumption (Gallons)	
Source	**Gasoline**	**Diesel**
Construction Equipment & Hauling Trips	–	74,352
Construction Worker Vehicle Trips	3,076	–

See Appendix AQ for SMAQMD Road Construction Emissions Model values and Appendix EN for energy calculation sheets.

Energy use during construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, construction contractors would be required to comply with the provisions of CCR Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than 5 minutes and would minimize unnecessary fuel consumption. Construction

equipment would be subject to the USEPA Construction Equipment Fuel Efficiency Standard, which would also minimize inefficient, wasteful, or unnecessary fuel consumption.

Pursuant to applicable regulatory requirements, the project would comply with construction waste BMPs to divert a minimum of 50 percent of construction and demolition debris and 100 percent of concrete, asphalt, and land-clearing debris. These practices would result in efficient use of energy necessary to construct the project. Furthermore, in the interest of cost-efficiency, construction contractors would not utilize fuel in a manner that is wasteful or unnecessary. Project construction would not result in significant impacts due to the wasteful, inefficient, or unnecessary consumption of energy, and impacts would be less than significant. This topic will not be discussed in the Supplemental EIR.

Operational Impacts

The proposed pipeline would convey wastewater to the existing Livermore Water Reclamation Plant, where it would be treated and discharged in accordance with the Livermore Water Reclamation Plant's permit to operate, which includes a maximum treatment capacity and requirements for the quality of treated discharge. An incremental increase in energy usage associated with wastewater treatment would be consistent with the permitted treatment capacity of the Livermore Water Reclamation Plant, and would not be wasteful or inefficient. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Several plans and policies have been adopted to ensure energy efficiency in the Bay Area, including the 2017 Bay Area Clean Air Plan, the City of Livermore CAP, and the City of Livermore General Plan. As discussed under *criterion a,* the project would be limited to energy consumption during construction, such as fuel consumed by vehicles and equipment. Overall, project implementation would not alter energy efficiency or affect existing renewable energy resources. Therefore, the project would not conflict with or obstruct the visions defined within the 2017 Bay Area Clean Air Plan, the strategies outlined in the 2012 CAP or its 2021 Update, or the goals, objectives, and policies discussed within the City's General Plan. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

7 Geology and Soils

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:					
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	EIR Page 4.2-32 through 4.2-35	No	No	No	N/A
2. Strong seismic ground shaking?	EIR Page 4.2-32 through 4.2-35	No	No	No	N/A
3. Seismic-related ground failure, including liquefaction?	EIR Page 4.2-35	No	No	No	N/A
4. Landslides?	EIR Page 4.2-28 through 4.2-31	No	No	No	N/A
b. Result in substantial soil erosion or the loss of topsoil?	EIR Page 4.2-30 through 4.2-31	No	No	No	N/A
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	EIR Page 4.2-28 through 4.2-31	No	No	No	N/A
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	EIR page 4.2-31 through 4.2-32	No	No	No	N/A
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	N/A	No	No	No	N/A

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	N/A	No	No	No	N/A

1997 EIR Summary

Chapter 4.2 (Geology and Soils) of the 1997 EIR analyzes the existing SLVSP's impacts on geology and soils. The 1997 EIR does not address the issues of septic tanks or alternative wastewater disposal systems and paleontological resources. The 1997 EIR determined that geology and soil impacts related to landslides, slope stability, expansive soils, faulting and surface rupture, liquefaction, and mineral resources would be less than significant in Subareas 1 and 2. However, impacts related to seismicity were determined to be potentially significant. As a result, geology and soils mitigation measures that were incorporated in the 1997 EIR to reduce potentially significant impacts are summarized below:

Mitigation Measure 4.2-5

In addition to implementing Policies 6-34 and 6-35 and satisfying the routine requirements expected of any development in the City, individual landowners/developers owners should:

- Take the recommendations of the Structural Engineers Association of Northern California into account when designing and implementing site development
- Secure breakable objects or focus work stations away from such potential hazards

Setting

The project alignment is located in one of the most seismically active areas in the country. There are three active faults within the project vicinity: the Greenville Fault, located approximately 2.4 miles to the east of the project alignment; the Las Positas Fault, which intersects a portion of the project alignment along Tesla Road; and the Calaveras Fault, located approximately 9.3 miles to the west of the project alignment. A portion of the project alignment is located within a State-designated Alquist-Priolo Earthquake Fault Zone.

Landslide risk is low throughout most of Livermore, including the project alignment (City of Livermore 2015). Areas prone to landslide hazards include areas along the hills in southern Livermore, in addition to the northwestern and northeastern portions of the city (City of Livermore 2015). The nearest landslide area is located approximately 1 mile south of the project alignment.

The project alignment is located within Zone X (Federal Emergency Management Agency [FEMA] 2021). Zone X is described as areas with a 0.2 percent annual chance flood hazard, areas of one percent annual chance flood with average depth less than 1 foot or with drainage areas of less than 1 square mile. Most of the project alignment along South Livermore Avenue is also located adjacent to a regulatory floodway (FEMA 2009).

The project alignment is located in an area of the city with low liquefaction susceptibility (City of Livermore 2015). Portions of the project alignment along Tesla Road and South Livermore Avenue are located within a liquefaction zone (DOC 2018). Lateral spreading is typically associated with liquefaction. Lateral spreading itself refers to horizontal ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water. Since the project alignment has been identified as being within a zone identified for very low liquefaction risk, the potential for lateral spreading to affect the alignment was determined to be low as no open spaces within a distance considered susceptible to lateral spreading exist.

The project alignment overlays soils that are not expansive (USDA Natural Resources Conservation Service 2019).

Paleontological Setting

The project alignment is located in Livermore Valley which lies in the central part of the Coast Ranges Province, one of the eleven major geomorphic provinces of California (California Geological Survey 2002) (Figure 1). The project alignment is located in the *Altamont* and *Livermore* United States Geological Survey 7.5-minute topographic quadrangles and was mapped at a scale of 1:24,000 by Dibblee and Minch (2006a, b). According to those authors, the area is underlain by two geologic units: Quaternary alluvium (Qa) and the Livermore Gravel (QTlg) (Figure 6). Qa is Holocene in age and consists of gravel, sand, and clay (Dibblee and Minch 2006a, b). QTlg is Plio-Pleistocene in age and consists of poorly sorted cobbles, pebbles, gravel, and sand (Dibblee and Minch 2006b).

Regulatory Setting

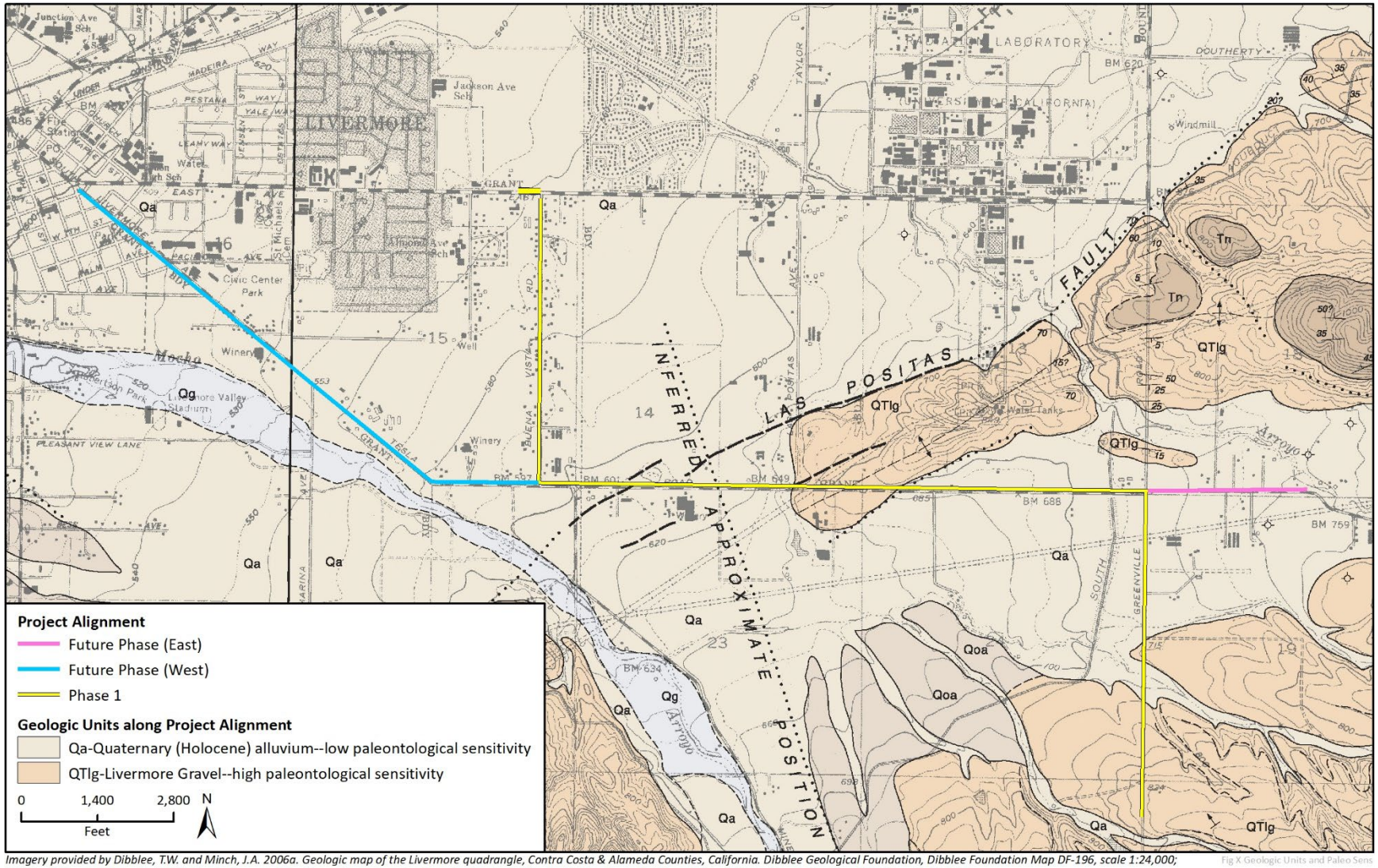
Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. Generally, siting of structures for human occupancy must be set back from the fault by approximately 50 feet. This Act groups faults into categories of active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 was enacted, in part, to address seismic hazards not included in the Alquist-Priolo Act, including strong ground shaking, landslides, and liquefaction. Under the Alquist-Priolo Act, the State Geologist is responsible for identifying and mapping seismic hazards. California Geological Survey (CGS) Special Publication 117, adopted in 1997 by the State Mining and Geology Board, constitutes guidelines for evaluating seismic hazards other than surface faulting and for recommending mitigation measures as required by PRC Section 2695(a). In accordance with the mapping criteria, the CGS seismic hazard zone maps identify areas with the potential for a ground shaking event that corresponds to 10 percent probability of exceedance in 50 years.

Figure 6 Geologic Units and Paleontological Sensitivity of the Project Alignment



Imagery provided by Dibblee, T.W. and Minch, J.A. 2006a. Geologic map of the Livermore quadrangle, Contra Costa & Alameda Counties, California. Dibblee Geological Foundation, Dibblee Foundation Map DF-196, scale 1:24,000; Dibblee, T.W. and Minch, J.A. 2006b. Geologic map of the Altamont quadrangle, Alameda County, California. Dibblee Geological Foundation, Dibblee Foundation Map DF-197, scale 1:24,000.

Fig X Geologic Units and Paleo Sens

The purpose of the Seismic Hazards Mapping Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. Cities, counties, and state agencies are directed to use seismic hazard zone maps developed by CGS in their land use planning and permitting processes. The Seismic Hazards Mapping Act requires site-specific geotechnical investigations prior to permitting most urban development projects in seismic hazard zones.

National Pollutant Discharge Elimination System (NPDES)

Construction projects which disturb one or more acres of soil or are part of a larger common plan of development that disturbs one or more acres of soil must obtain coverage under the statewide NPDES General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ). To obtain coverage under the Construction General Permit, a project-specific SWPPP must be prepared. The SWPPP outlines BMPs to reduce stormwater and non-stormwater pollutant discharges, including erosion control, minimizing contact between construction materials and precipitation, and strategies to prevent equipment leakage or spills.

LMC

LMC Chapter 15.02, Grading, Excavations, and Fills, includes a grading ordinance that seeks to mitigate hazards associated with erosion and land stability. The ordinance establishes requirements for grading permits, including submittal and construction requirements. An erosion and sedimentation control plan must be submitted with a grading permit application, along with a drainage plan and pollution control plan. Implementation of these plans will also help to ensure that the stormwater runoff from a construction site will meet applicable water quality standards. The LMC discusses soils and foundations in accordance with the 2016 California Building Code (CBC) to ensure that professionals have been retained to review the plans and specifications recommended in the soil investigation and provide soil site observation and provide field and final reports to ensure that all of the work associated with the project substantially conforms with the approved plans, specifications, and investigation. Furthermore, LMC Section 15.20 includes specifications regarding seismic resistance and structural observations of the lateral system to reflect changes in the CBC.

Impact Analysis

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The project alignment, like much of California, may experience moderate to potentially severe ground shaking from earthquakes generated on known faults within 60 miles of the project alignment, such as the Greenville Fault. There is potential for fault rupture along the project alignment and construction workers would be present at the site and working on a mapped fault; however, no structures or new land uses are proposed as a part of the project. Additionally, the project would be designed consistent with Objective INF-2.1 Policy 7 of the City General Plan, which

requires sewer collection and transmission systems to cross seismic faults at right angles and include safety features to prevent wastewater leakage and facilitate rapid repair. Therefore, the project would not cause direct or indirect adverse effects resulting from fault ruptures or seismic activities (DOC 2018). The project would result in less than significant impacts related to seismically-induced ground shaking from nearby faults. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

The project alignment is located within a low liquefication hazard zone (DOC 2018). Furthermore, as stated above in the discussion provided under *criterion a.1* and *criterion a.2*, no structures or new land uses are proposed under the project. Therefore, the project would result in a less than significant impact. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The risk of landslides throughout the city is low (City of Livermore 2015). The nearest area with a landslide risk is located approximately 1 mile south of the project alignment (City of Livermore 2015). The project alignment is included in the very low landslide risk area. Furthermore, because the alignment is located in a flat area, project construction and operation would not result in landslides. Impacts related to landslides would be less than significant. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

Construction activities would disturb soil along the project alignment, resulting in potential for soil erosion and loss of topsoil. As noted in Environmental Checklist Section 3, *Air Quality*, the project would be required to comply with BAAQMD Regulation 6 regarding incorporation of measures to reduce fugitive dust, which would reduce the potential for construction-related wind erosion. BAAQMD Regulation 6 includes requirements for the application of water or stabilizing agents to prevent generation of dust plumes, pre-watering materials prior to the use of tarps to enclose haul trucks, stabilizing sloping surfaces using soil binders until vegetation or ground cover efficiently stabilize slopes, hydroseeding prior to rain, and washing mud and soils from equipment at the conclusion of trenching activities. Implementation of these measures pursuant to BAAQMD Regulation 6 would reduce the potential for project construction to result in substantial wind erosion or loss of topsoil.

Because the project would disturb more than 1 acre of land, it would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) (“Construction General Permit”) adopted by the State Water

Resources Control Board (SWRCB). Compliance with the permit requires filing a Notice of Intent with the SWRCB. Permit conditions require preparation of a project-specific SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Inspection of construction sites before and after storms is also required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with existing regulatory requirements, including implementation of applicable BMPs related to wind and water erosion control, would reduce potential soil loss and erosion from the alignment. In addition, the project would be constructed within existing paved rights-of-way, with limited soil exposure during construction.

Impacts related to erosion and loss of topsoil would be less than significant. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The project alignment is located within a liquefication hazard zone (DOC 2018). However, the project does not propose habitable structures or new land uses and would be constructed within existing paved rights-of-way. Given the nature of the proposed project and existing conditions along the alignment, the potential for lateral spreading would be low.

Pursuant to LMC Chapter 15.02, the project would comply with CBC requirements and project construction would not cause the ground to become unstable or result in landslide, lateral spreading, or liquefaction because the roadway would be maintained and applicable regulations would be followed. The project would result in a less than significant impact, and this topic will not be discussed in the Supplemental EIR. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Soils within the project alignment have a low linear extensibility, which corresponds to a low shrink-swell potential and low expansiveness (Natural Resources Conservation Service 2022). No expansive soils, which would require modifications to project design, are known to be present within the proposed alignment. Therefore, the project would have a less than significant impact, and this topic will not be discussed in the Supplemental EIR. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR.

LESS THAN SIGNIFICANT IMPACT

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No septic systems or alternative wastewater disposal systems are proposed and no related impacts would occur. In addition, the project would provide an opportunity to take existing development off septic systems. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the project area using the results of the paleontological locality search and review of existing information in the scientific literature concerning known fossils within those geologic units. Rincon reviewed fossil collections records from the University of California Museum of Paleontology (UCMP) online database and Paleobiology Database (PBDB), which contain known fossil localities in Alameda County.

Following the literature review and museum record search a paleontological sensitivity classification was assigned to the geologic units within the project area. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. The Society of Vertebrate Paleontology (SVP) (2010) has developed a system for assessing paleontological sensitivity and describes sedimentary rock units as having high, low, undetermined, or no potential for containing scientifically significant nonrenewable paleontological resources. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present.

The project alignment is underlain by two geologic units: Quaternary alluvium (Qa) and Livermore Gravel (QTlg). Quaternary alluvium (Qa) is Holocene in age and generally considered too young to preserve scientifically significant paleontological resources at the surface where sediments are less than 5,000 years old. However, young Holocene units may be shallowly underlain by older units at unknown depths in the subsurface near the project alignment. These older units have the potential to contain scientifically significant paleontological resources, and records of fossil occurrences from quaternary alluvium are documented from within Alameda County (PBDB 2022; UCMP 2022). Older units, such as Livermore Gravel (QTlg) and Pleistocene-aged alluvium (Qoa) are exposed at the surface in proximity (i.e., less than 2000 feet) to the project alignment (Figure 6), indicating a potential to be encountered at relatively shallow depths (i.e., less than five feet) within the project area. Qa is assigned a low paleontological sensitivity.

The Livermore Gravel is a Pliocene to Pleistocene age unit with a history of producing scientifically significant vertebrate fossils in Alameda County. These fossils include mammoth (*Mammuthus*), horse (*Equus*), ground sloth (Pilosa), and turtle (*Clemmys*) (PBDB 2022; UCMP 2022). Livermore Gravel (QTlg) is assigned a high paleontological sensitivity. Therefore, impacts could be significant and mitigation measures would be required.

Mitigation Measure

GEO-1 Paleontological Resources Monitoring and Mitigation

Prior to the commencement of project construction, a qualified paleontological monitor (i.e., a paleontologist who meets the SVP [2010] standards as a Paleontological Resource Monitor) shall be retained to conduct paleontological monitoring during ground-disturbing activities (including, but not limited to site preparation, grading, excavation, and trenching) of intact (i.e., previously undisturbed) areas mapped as high sensitivity geologic units (QTlp) located along the alignment. This includes areas along Tesla Road near Vasco Road and along Greenville Road approximately 3,000 feet south of Tesla Road (refer to geologic unit map prepared by Dibblee and Minch [2006a]), which are anticipated to require ground disturbance to depths greater than 15 feet. Monitoring shall be performed by a Qualified Paleontologist (i.e., a paleontologist who meets the SVP [2010] standards as a Qualified Professional Paleontologist).

Full-time monitoring shall be conducted for all ground-disturbing activities that impact previously undisturbed geologic units mapped at the surface as Pliocene to Pleistocene age Livermore Gravel (Qtlp), which has a high paleontological sensitivity. Additionally, initial part-time monitoring (i.e., spot-checking) shall be conducted for all ground-disturbing activities that impact previously undisturbed geologic units mapped at the surface as middle to late Holocene alluvial deposits (Qa) to check for the presence of geologic units of high sensitivity (i.e., early Holocene older alluvium [Qoa, QTlp]). If older sediments are observed at depth, then full-time monitoring shall be conducted. Ground-disturbing activities that impact previously disturbed sediments only do not require paleontological monitoring.

The duration and timing of the monitoring shall be determined by the Qualified Paleontologist. If the Qualified Paleontologist determines that full-time or part-time monitoring is no longer warranted, they may recommend reducing monitoring to periodic spot-checking or may recommend that monitoring cease entirely. Monitoring shall be reinstated if any new ground disturbances of previously undisturbed areas are required, and reduction or suspension shall be reconsidered by the Qualified Paleontologist at that time.

If a paleontological resource is discovered, the monitor shall have the authority to temporarily divert construction equipment around the find until it is assessed for scientific significance and collected. Once salvaged, significant fossils shall be prepared to a curation-ready condition and curated in a scientific institution with a permanent paleontological collection (such as the UCMP). Curation fees are the responsibility of the project owner.

A final report shall be prepared describing the results of the paleontological monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the City. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

Mitigation Measure GEO-1 would help ensure that paleontological resources would not be damaged or destroyed during ground-disturbing activities. This measure would apply to all phases of project construction and would ensure that any significant fossils present on-site are preserved. Implementation of Mitigation Measure GEO-1 would reduce potential impacts to paleontological resources to less than significant level through the recovery, identification, and curation of previously unrecovered fossils. This mitigation measure will be listed in the Supplemental EIR's

executive summary and included in the project's mitigation monitoring and reporting program. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	N/A	No	No	No	N/A
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	N/A	No	No	No	N/A

1997 EIR Summary

The 1997 EIR does not address the issue area of greenhouse gas (GHG) emissions.

Overview of Climate Change and GHGs

GHG emissions occur both naturally and as a result of human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. CO_2 has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2021).[2]

The United Nations IPCC expressed that the rise and continued growth of atmospheric CO_2 concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatonnes of anthropogenic CO_2 was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021). Furthermore, since the late 1700s, estimated concentrations of CO_2, methane, and nitrous oxide in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent, respectively, primarily due to human

[2] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

activity (USEPA 2021b). Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature. Potential climate change impacts in California may include loss of snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (State of California 2018).

Regulatory Framework

In response to climate change, California implemented Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006." AB 32 required the reduction of statewide GHG emissions to 1990 emissions levels (essentially a 15 percent reduction below 2005 emission levels) by 2020 and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. On September 8, 2016, the Governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program and the Low Carbon Fuel Standard, and implementation of recently adopted policies and legislation, such as SB 1383 (aimed at reducing short-lived climate pollutants including methane, hydrofluorocarbon gases, and anthropogenic black carbon) and SB 100 (discussed further below). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends local governments adopt policies and locally appropriate quantitative thresholds consistent with a statewide per capita goal of 6 metric tons of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017).

The City of Livermore adopted its current CAP in November 2012. The 2012 CAP outlined Livermore's comprehensive strategy to reduce GHG emissions and quantify the reductions in order to meet its GHG emission targets by the year 2020. The City drafted a CAP Update in May 2021 as a direct update to its previous CAP, outlining new mitigation and adaptation measures aimed to further reduce the City's GHG emissions, including energy-related emissions, and to increase resilience throughout the community.

BAAQMD Significance Thresholds

Individual projects do not generate sufficient GHG emissions to influence climate change directly. However, physical changes caused by a project can contribute incrementally to significant cumulative effects, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

According to CEQA Guidelines Section 15183.5(b), projects can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (2016) in its white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions. The 2012 CAP is a qualified CAP and complies with the requirements of CEQA Guidelines Section 15183.5(b)(1). However, the 2012

CAP only address GHG emissions pursuant with the AB 32 2020 goal and does not include strategies to comply with SB 32. Furthermore, the CAP is designed to address new building developments not temporary construction activities. Therefore, the CAP is not used for tiering purposes.

Instead, the construction emissions were quantified and presented in the analysis. BAAQMD does not have a significance threshold for construction GHG emissions due to the interim nature of the activities. Construction-related GHG emissions would be considered less than significant.

Methodology

GHG emissions associated with project construction were estimated using SMAQMD Road Construction Emissions Model Version 9.0.0 for informational purposes and are included in Appendix AQ. The SMAQMD model calculates emissions of CO_2, methane, and nitrous oxide associated with construction activities and vehicle trips. Emissions were modeled in accordance with the assumptions outlined in the Methodology section in Environmental Checklist Section 3, *Air Quality*.

Impact Analysis

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Project construction would generate temporary GHG emissions, primarily as a result of construction equipment as well as from construction worker vehicles and heavy trucks transporting materials and soil export. Project construction would generate an estimated total of 734 MT of CO_2e (Appendix AQ). Furthermore, the project would follow BAAQMD construction BMPs and implement the most current BAAQMD recommendations for construction activities. Therefore, construction-related GHG emissions would not be a permanent source of GHG emissions and impacts would be less than significant.

While the conveyance of wastewater and additional wastewater treatment demand would result in an incremental increase in energy demand at the Livermore Water Reclamation Plant, the GHG emissions associated with the additional energy demand would be within the permitted thresholds for the Livermore Water Reclamation Plant, and the project would be consistent with applicable GHG policies such as the 2017 Scoping plan or the City's General Plan. Therefore, impacts would be less than significant and this topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The 2017 Scoping Plan's strategies that are applicable to the proposed project include increasing water conservation. The project would support the 2017 Scoping Plan's water quality goals because it would allow existing wineries and residential development in the project vicinity to connect to the City's wastewater system and remove or abandon their on-site septic systems. The wastewater generated by parcels that would connect to the extended sewer line would be treated at the Livermore Water Reclamation Plant, which recycles wastewater for irrigation and fire protection; in contrast, the currently generated wastewater is disposed of via septic systems and is not reused. As a result, the transition from septic to sewer would conserve water. Additionally, the project would upsize four segments of 12-inch sewer line on East Avenue. The existing sewer pipes in these areas

are currently undersized to efficiently convey wastewater and would not be able to handle the additional wastewater load without creating clogs in the system. Upgrading the pipes would promote wastewater conveyance efficiency and would minimize the existing system wastewater losses associated with leaks and reduced efficiencies due to age. Table 7 provides energy efficiency goals and policies provided in the City's General Plan (City of Livermore 2015) and describes the project's consistency with these policies. As discussed in the table, the project would not conflict with or obstruct a state or local plan related to GHGs and would be consistent with the 2017 Scoping Plan, and no impact would occur. This topic will not be discussed in the Supplemental EIR.

Table 7 Project Compliance with Energy Efficiency Goals and Policies

Energy Efficiency Goal or Policy	Is the Project Consistent?
City of Livermore General Plan	
Goal CLI-1 Policy 2. Climate Action Plan. Include mechanisms to ensure regular review of progress toward the GHG emission reduction targets established by the CAP, report progress to the public and responsible officials, and revise the plan as appropriate, using principles of adaptive management.	**Consistent.** The project would be required to comply with current CALGreen requirements, which encourage implementation of water use efficiency during construction, such as water use for dust control.
Goal CLI-1 Policy 3 Climate Action Plan. Work with other local and regional governments to assess federal and state programs and their impact on GHG emissions and mitigation efforts.	**Consistent.** The project would be required to comply with current Energy Code and CALGreen requirements, which encourage energy use efficiency during construction.
Goal CLI-1 Policy 4. Development Project Framework. Evaluate the GHG emissions impacts of proposed developments through the CEQA process. Require preparation of project level GHG emissions inventories. Establish requirements for tiered significance thresholds for the evaluation of projects and identification and application of mitigation.	**Consistent.** GHG impacts are quantified in *criterion a*, above. Impacts of the project would be less than significant.

Source: City of Livermore 2015

NO IMPACT

9 Hazards and Hazardous Materials

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	N/A	No	No	No	N/A
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	N/A	No	No	No	N/A
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	N/A	No	No	No	N/A
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	N/A	No	No	No	N/A
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	N/A	No	No	No	N/A
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	N/A	No	No	No	N/A
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	N/A	No	No	No	N/A

1997 EIR Summary

The 1997 EIR does not address the issue area of hazards and hazardous materials.

Setting

Government Code Section 65962.5 requires the California Environmental Protection Agency to develop an updated list of hazardous material sites (Cortese List). The California DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List (DTSC 2021a). The analysis for this section included a review of the following resources on January 14, 2022, to provide hazardous material release information:

- **USEPA**
  - Comprehensive Environmental Response, Compensation, and Liability Information System/Superfund Enterprise Management System (USEPA 2021)
- **SWRCB**
  - GeoTracker search for leaking underground storage tanks and other cleanup sites (SWRCB 2020)
- **DTSC**
  - Cortese List of Hazardous Waste and Substances Sites (DTSC 2021a)
  - EnviroStor search for hazardous facilities or known contamination sites (DTSC 2021b)

Based on review of these databases, it was determined that the project alignment is not included on existing lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5. However, the SWRCB has listed the following nearby facilities as a Leaking Underground Storage Tank (LUST) cleanup sites:

- Wente Winery, located at 5565 Tesla Road immediately south of the project alignment, was listed for gasoline contamination to an aquifer and a well used for drinking water supply. The case was closed in November 2009.
- Robert and Edna Carpenter, located at 524 Livermore South Avenue immediately east of the project alignment, was listed for heating and fuel oil contamination to soil. The case was closed in January 1994.
- A private residence, located on the corner of South Livermore Avenue and 5th Street immediately west of the project alignment, was listed for heating and fuel oil contamination to an aquifer used for drinking water supply. The case was closed in January 2016.
- Arco, located at 286 South Livermore Avenue approximately 600 feet north of the project alignment, was listed for gasoline contamination to an aquifer used for drinking water supply. The case was closed in November 2015.
- Del Valle Continuation High School, located at 2253 5th Street approximately 500 feet southwest of the project alignment, was listed for heating and fuel oil contamination to soil. The case was closed in June 2008.
- Pacific Bell, located at 2388 2nd Street approximately 1,000 feet north of the project alignment, was listed for diesel contamination to soil. The case was closed in February 1996.
- Chevron, located at 2259 1st Street approximately 1,100 feet north of the project alignment, was listed for benzene, diesel, gasoline, and total petroleum hydrocarbon contamination to soil vapor and to an aquifer used for drinking water supply. The case remains open with verification monitoring continued as of January 2022.

- North K Associates, located at 2322-38 1st Street approximately 0.25 mile north of the project alignment, was listed for gasoline contamination to soil. The case was closed in October 1994.
- City of Livermore Fire Station #1, located at 4550 East Avenue approximately 0.25 mile north of the project alignment, was listed for waste oil, motor oil, hydraulic oil, and lubricating oil contamination to an aquifer used for drinking water supply. The case was closed in June 1996.

No additional listed sites were identified within 0.25 mile of the project site.

Regulatory Setting

NPDES

As the proposed project would disturb over 1 acre of land, the City would be required to obtain coverage under the NPDES General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit Order 2009-0009-DWQ). To obtain coverage under the Construction General Permit, a project-specific SWPPP is required, which would specify BMPs to quickly contain and clean up accidental spills or leaks.

Department of Toxic Substances Control (DTSC)

Part of the DTSC involves implementing the CCR Title 22 regarding hazardous waste management, transfer, treatment, storage, identification, disposal, and site remediation. CCR Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials, such that exposure levels do not exceed Division of Occupational Safety and Health standards.

Bay Area Air Quality Management District

The BAAQMD is the public agency that regulates the stationary sources of air pollution in the nine counties of the San Francisco Bay Area. BAAQMD's Regulation 11, Rule 2 governs the proper handling and disposal of asbestos-containing materials for demolition, renovation, and manufacturing activities in the Bay Area.

Tri-Valley Hazard Mitigation Plan

The Disaster Mitigation Act was passed in 2000, shifting the emphasis on hazard mitigation from the federal level toward planning for disasters before they occur. The Disaster Mitigation Act requires state and local governments to develop hazard mitigation plans and to provide updates to such plans every five years, as a condition for federal disaster grant assistance. The Tri-Valley Local Hazard Mitigation Plan fulfils the five-year plan update requirement and identifies resources, information, and strategies for reducing risk from natural hazards in the Tri-Valley planning area.

City of Livermore General Plan 2003-2025

The Public Safety Element of the City's General Plan contains goals and policies related to hazardous material and waste management. Goal PS-4 specifically discusses the City's objectives and policies for protecting the community from the harmful effects of hazardous materials. The City maintains a formally designated hazardous material carrier route to direct hazardous materials away from populated and other sensitive areas, prohibits the parking of vehicles transporting hazardous materials on City streets, and generally encourage the reduction of solid and hazardous wastes generated within the City, in accordance with Countywide plans (City of Livermore 2015).

Impact Analysis

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Project construction would temporarily increase the use and transport of hazardous materials in the project area through the operation of vehicles and equipment. Such substances include diesel fuel, oil, solvents, and other similar construction-related hazardous materials and could introduce the potential for an accidental spill or release to occur. These materials would be contained within receptacles specifically engineered for safe storage and would not be transported, stored, or used in quantities which would pose a significant hazard to the public or construction workers themselves. Hazardous materials used during project construction must be disposed of offsite in accordance with all applicable state and local laws and regulations, such as CCR Title 22 and the City's General Plan.

Project construction would require the excavation and transport of paving materials (e.g., asphalt, concrete, roadbed fill materials) and soils which could possibly be contaminated by vehicle-related pollution (e.g., oil, gasoline, diesel, and other automotive chemicals). Additionally, roadways constructed before the 1970s were known to use asbestos containing materials in asphalt and lead-based paint for roadway markings. The existing asphalt pavement may contain asbestos and/or lead-based paint due to its age. All such paving, roadbed materials, and soils removed during construction would be transported and disposed of in accordance with applicable codes and regulations, including CCR Title 22, to ensure no significant hazard to construction workers or the surrounding community would occur. With required adherence to regulations, impacts would be less than significant.

Project operation would involve the conveyance of wastewater and would not require transport, use, storage, or disposal of hazardous materials. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials. Similarly, the project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Impacts would be less than significant and will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Schools located within 0.25 mile of the project alignment include Livermore High School, located adjacent to the Bottleneck Project on East Avenue near 7th Street; Our Savior Lutheran School, located adjacent to the project alignment along South Livermore Avenue; De Valle Continuation High School, located 500 feet southwest of the alignment on Livermore Avenue; and Vineyard High School, located approximately 0.25 mile southwest of the Bottleneck Project on East Avenue. As described under *criterion a* and *criterion b*, above, an accidental spill or release of hazardous or potentially hazardous materials such as vehicle and equipment fuels could occur during project construction. Hazardous materials used during project construction would be disposed of offsite in

accordance with all applicable laws and regulations, including but not limited to the California Building and Fire Codes, as well regulations of the federal and State Occupational Safety and Health Administrations. Therefore, potential impacts associated with an accidental emission or release of hazardous materials in proximity to a school would be less than significant. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

As described above in the *Setting*, the proposed project would not occur on a site, or directly adjacent to a site, listed as currently containing hazardous materials pursuant to Government Code Section 65962.5. **T**his impact would be less than significant and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The closest airport is the Livermore Municipal Airport, which is approximately 3.75 miles west of the project alignment. The project alignment is not located within a Safety Compatibility Zone as designated by the Livermore Executive Airport Land Use Compatibility Plan (County of Alameda 2012). Therefore, the proposed project would not subject people working along the alignment to safety hazards or excessive noise, and there would be no impact. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would require temporary lane closures along the alignment throughout construction, but traffic would be managed by a county-approved traffic control plan. Lane closures would occur along limited segments of the alignment, as approximately 150 linear feet of pipeline would be constructed each day. Emergency routes would remain open with minimal delay resulting from project construction, and the project would not interfere with an adopted emergency response plan or emergency evacuation plan.

Project operation would not change or disrupt the existing roadway and traffic patterns, and no streets would be closed or reconfigured once construction is complete. As such, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, including the Tri-Valley Hazard Mitigation Plan. The project would have a less than significant impact and this topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project alignment is adjacent to existing agricultural, residential, and commercial uses. There are no wildland conditions on or adjacent to the project alignment, and the project is not located in a designated Very High Fire Hazard Severity Zone (CAL FIRE 2007, 2008). However, the eastern portion of the project alignment, including Greenville Road and a portion of Tesla Road, is located in an area designated as a Moderate FHSZ (CAL FIRE 2007, 2008). The project would be constructed within paved rights-of-way and would not expose people or structures to a significant loss, injury, or death involving wildland fires. There would be no impact. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

10 Hydrology and Water Quality

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	EIR Pages 4.3-27 through 4.3-28	No	No	No	N/A
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	EIR Page 4.9-14	No	No	No	N/A
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:					
(i) Result in substantial erosion or siltation on- or off-site;	EIR Pages 4.3-24 through 4.3-27	No	No	No	N/A
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	EIR Pages 4.3-23 through 4.3-24	No	No	No	N/A
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	EIR Pages 4.3-21 through 4.3-23	No	No	No	N/A
(iv) Impede or redirect flood flows?	EIR Pages 4.3-21 through 4.3-24	No	No	No	N/A
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	EIR Pages 4.3-28 through 4.3-29	No	No	No	N/A
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	N/A	No	No	No	N/A

1997 EIR Summary

Chapter 4.3 (Hydrology, Drainage and Water Quality) of the 1997 EIR analyzes the existing SLVSP's impacts related to hydrology and water quality. The 1997 EIR does not address the issues of conflicts with or obstructs implementation of a water quality control plan or sustainable groundwater management plan. The 1997 EIR determined that hydrology and water quality impacts related to site peak flow rates/localized flooding, erosion, and water quality would be less that significant.

Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

c.(i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.(ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The project would result in construction activities that could affect the water quality of nearby waterways during the implementation of dust control measures, which could result in sediments carried by runoff into nearby waterways. The project alignment is located within Flood Zone X (FEMA 2021). The project would also result in a construction-related increase in water demand for dust control. Impacts are potentially significant. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. This issue will be studied in the Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

11 Land Use and Planning

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:						
a.	Physically divide an established community?	EIR Pages 4.1-29 through 4.1-35	No	No	No	Yes
b.	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	EIR Pages 4.1-16 through 4.1-23 and 4.1-45 through 4.1-77	No	No	No	N/A

1997 EIR Summary

Chapter 4.1 (Land Use and Public Plans) of the 1997 EIR analyzes the existing SLVSP's impacts related to land use. The 1997 EIR determined that land use impacts related to conflicts with land use plans would be less that significant. Furthermore, impacts related to physical divisions of established communities were determined to be potentially significant or significant and unavoidable in Subareas 1 and 2. As a result, land use mitigation measures that were incorporated in the 1997 EIR to reduce potentially significant impacts are summarized below:

Mitigation Measures 4.1-4

Off-site uses where increased incidents of trespass, vandalism, or theft are expected as a result of the new residential population introduced by SLVSPA buildout already are fenced for security. Existing fences afford as much protection as would be reasonable in consideration of the expected significance of impact. The following measures (already included in Draft Plan site plans and described in Land Use Element development concepts) would further reduce impacts if incorporated as a condition of project approval:

- Fifty foot or wider landscaped and cultivated setbacks would separate residential lots from subarea boundaries and from difference adjacent uses or densities. Fifty-foot setbacks would be located in Subareas 1 and, adjacent to SNL and the Shaheen Industrial Park, respectively. Cultivated setbacks of varying widths would provide both visual and functional buffering from existing on- and off-site land uses in all subareas (see Impact 4.1-5, below)
- Within the 50-foot-wide landscaped buffer in Subarea 1 adjacent to the SNL property line, planting trees 30 feet away from the boundary and allowing only low-growing shrubbery or ground cover in the intervening buffer to permit visibility for security purposes and avoid

creating places for intruders to hide or obtain access to SNL while shielding and privacy for residential uses in Subarea 1.

Mitigation Measures 4.1-7(a)

The City can choose among the following approaches to achieving conformance between the Draft Plan and already adopted City of Livermore policies:

- Modify the Plan before finally adopting and implementing it
- Amend South Livermore Policies of the City of Livermore Community General Plan or the General Plan itself to better reflect more current thinking and more detailed site-specific planning the Draft Plan represents

Mitigation Measures 4.1-7(b)

The County will review and comment on both the Draft Plan and this EIR in response to which the City may review or modify aspects of the Plan before adopting it formally. In recognition of the mutual interests of the City and County in the South Livermore Valley, preceded by the joint planning process which led to formulation of both the Area Plan and Draft Plan, the following measure is recommended:

- The City should work with the County to resolve County concerns and policy conflicts (if any) before adopting and implementing the South Livermore Valley Specific Plan. This could include reaffirming continued cooperative programs and/or establishing a framework to coordinate further on specific concerns as the City implements specific aspects of the Plan.

Setting

As stated in Environmental Checklist Section 1, *Aesthetics*, land use along much of the project alignment is designated in the City's General Plan Map as AGVT, with some parcels alongside the project alignment designated as Rural Residential (RR), Urban High Residential (UH), Parks, Trailways, Recreation Areas (OSP), Agricultural Preserve (SV-AP), and Vineyard Commercial (SV-VC) (City of Livermore 2015). A portion of the parcels in the project vicinity are zoned by the City of Livermore, while others are zoned by Alameda County. Parcels zoned by the City primarily include PD-SLVSP, along with one adjacent parcel zoned each as Education and Institutions (E), Open Space Agricultural (OS-A), and South Livermore Valley Agricultural (SLV-AG). Parcels zoned by Alameda County include Agriculture, Single Family Residential, and Planned Development (County of Alameda 2021). Generally, surrounding and adjacent parcels in the project vicinity consist of residential development, commercial development, vineyards and wineries, and open space uses compliant with City's General Plan, SLVSP, and the County's Zoning Ordinance.

Regulatory Setting

City of Livermore General Plan 2003-2025

According to the City's General Plan Land Use Element, the AGVT land use category is intended to preserve and promote agriculture and viticulture as primary uses in locations that are deemed suitable for cultivated agriculture. The areas are also intended to protect sensitive or unique environmental and land characteristics, including an area's rural character (City of Livermore 2015).

SLVSP

The intent of the PD-SLVSP zone is to implement the SLVSP, adopted in 1997 and amended in 2004. The SLVSP provides the framework for growth and development within the unincorporated area along the City of Livermore's southern boundary, where portions of the project are proposed. The project alignment would extend along SLVSP Subareas 1 and 2. Permitted land uses in Subarea 1 are limited to residential development while permitted land uses in Subarea 2 include residential development and commercial development limited to a small winery or bed and breakfast with a small tasting room or small restaurant and a medium winery or bed and breakfast with a tasting room or small restaurant on 8 acres (City of Livermore 1997).

Impact Analysis

a. Would the project physically divide an established community?

Project implementation would not alter the existing pattern of land use in the project vicinity or introduce new land uses and would not divide connected neighborhoods or land uses from one another. Project construction would not physically or socially divide an established community or limit movement, travel, or other interaction between established land uses. Therefore, no impacts would occur and this topic will not be discussed in the Supplemental EIR. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. No development beyond the current vision of the General Plan and SLVSP would occur as a result of the project. The City General Plan requires new development in the City to connect to the municipal system, following confirmation of the availability of adequate treatment and disposal capacity (Objective INF-2.1). Therefore, the project would not conflict with existing land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating and environmental effect. Therefore, no impacts would occur and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

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12 Mineral Resources

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:						
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	EIR page 4.2-35 through 4.2-36	No	No	No	N/A
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	EIR page 4.2-35 through 4.2-36	No	No	No	N/A

1997 EIR Summary

EIR Chapter 4.2 (Geology, Soils, and Seismicity) of the 1997 EIR analyzes the existing SLVSP's mineral resources impacts. The 1997 EIR determined that impacts related to mineral resources would be less that significant. As a result, mineral resources mitigation measures were not required.

Setting

The project alignment is not located in an identified mineral resource area or mineral resource zone (DOC 2015b).

Regulatory Setting

Pursuant to the Surface Mining and Reclamation Act of 1975, the State Mining and Geology Board requires all cities to incorporate into their general plans mapped mineral resources designations approved by the State Mining and Geology Board. Some mineral resources can be found within Alameda County. The City of Livermore General Plan indicates that there are areas in the vicinity that are underlain by alluvial deposits containing significant reserves of high-value sand and gravel deposits. Much of the valley floor located south of I-580 was also classified by the CGS as an area of significant mineral resources, including portions of the South Livermore Avenue and Tesla Road (City of Livermore 2015).

Impact Analysis

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No existing mineral resource mining operations occur along the alignment. The project would not require the use of mineral resources valuable to the region and residents of the state, and no mining activity is planned to occur on the project alignment. The project would not result in the loss of availability of mineral resources. Therefore, no impacts would occur and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

13 Noise

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project result in:						
a.	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	EIR Pages 4.7-10 through 4.7-14 and 4.7-16 through 18	No	No	No	N/A
b.	Generation of excessive groundborne vibration or groundborne noise levels?	EIR Pages 4.7-16 through 4.7-18	No	No	No	N/A
c.	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	N/A	No	No	No	N/A

1997 EIR Summary

Chapter 4.7 (Noise) of the 1997 EIR analyzes the existing SLVSP's impacts related to on-site operational noise, traffic noise, and construction noise. The 1997 EIR does not address the issues of being 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. The 1997 EIR determined that impacts related to noise would be less that significant. As a result, noise mitigation measures were not required.

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2020).

Human Perception of Sound

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Caltrans 2013).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible (8 times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5 times the sound energy) (Caltrans 2013).

Sound Propagation and Shielding

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in the noise level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions.

Sound levels are described as either a "sound power level" or a "sound pressure level," which are two distinct characteristics of sound. Both share the same unit of measurement, the dB. However, sound power (expressed as L_{pw}) is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers, such as an eardrum or microphone, which is the sound pressure level. Sound measurement instruments only measure sound pressure, and noise level limits are typically expressed as sound pressure levels.

Noise levels from a point source (e.g., construction, industrial machinery, air conditioning units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (FHWA 2011). Structures can substantially reduce exposure to noise as well. The FHWA's guidance indicates that modern building construction generally provides an exterior-to-interior noise level reduction of 10 dBA with open windows and an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (FHWA 2011).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptors used for this analysis are the equivalent noise level

(L_{eq}), Day-Night Average Level (DNL; may also be symbolized as L_{dn}), and the community noise equivalent level (CNEL, may also be symbolized as L_{den}).

L_{eq} is one of the most frequently used noise metrics; it considers both duration and sound power level. The L_{eq} is defined as the single steady-state A-weighted sound level equal to the average sound energy over a time period. When no time period is specified, a 1-hour period is assumed. The L_{max} is the highest noise level within the sampling period, and the L_{min} is the lowest noise level within the measuring period. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using DNL, which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.). Community noise can also be measured using CNEL, which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013).[3] The relationship between the peak-hour L_{eq} value and the DNL/CNEL depends on the distribution of noise during the day, evening, and night; however noise levels described by DNL and CNEL usually differ by 1 dBA or less. Quiet suburban areas typically have CNEL noise levels in the range of 40 to 50 CNEL, while areas near arterial streets are in the 50 to 60+ CNEL range (FTA 2018).

Groundborne Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby building or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e., non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation. The American Association of State Highway and Transportation Officials (AASHTO) has determined vibration levels with potential to damage nearby buildings and structures; these levels are identified in Table 8.

[3] Because DNL and CNEL are typically used to assess human exposure to noise, the use of dBA is implicit. Therefore, when expressing noise levels in terms of DNL or CNEL, the dBA unit is not included.

Table 8 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

Source: Caltrans 2020

Numerous studies have been conducted to characterize the human response to vibration. The vibration annoyance potential criteria recommended for use by Caltrans, which are based on the general human response to different levels of groundborne vibration velocity levels, are described in Table 9.

Table 9 Vibration Annoyance Potential Criteria

	Vibration Level (in/sec PPV)	
Human Response	Transient Sources	Continuous/Frequent Intermittent Sources[1]
Severe	2.0	0.4
Strongly perceptible	0.9	0.10
Distinctly perceptible	0.25	0.04
Barely perceptible	0.04	0.01

in/sec = inches per second; PPV = peak particle velocity

Source: Caltrans 2020

[1] Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Regulatory Setting

CCR

CCR, Title 24, Section 1207.4 requires interior noise levels attributable to exterior sources to be at or below 45 dBA in any habitable room of a development based on the noise metric used in the noise element of the local general plan. All residential windows, exterior doors, and exterior wall assemblies would be required to have sound transmission class ratings that would ensure adequate attenuation of noise at a range of frequencies.

City of Livermore General Plan 2003-2025

The City's General Plan Noise Element generally defines a sensitive receiver as residential areas, hospitals, nursing homes, health care facilities, libraries, schools, and wildlife preserves. Sensitive receivers nearest the project alignment include residential development located adjacent to the project alignment along Buena Vista Avenue, South Livermore Avenue, and East Avenue; the Civic Center Library, located adjacent to the project alignment on South Livermore Avenue; and schools, including Livermore High School, located adjacent to one location of the Bottleneck Project on East Avenue near 7th Street, and Our Savior Lutheran School, located adjacent to the project alignment along South Livermore Avenue. Existing noise sources within the City primarily come from vehicular traffic, aircraft, industrial plant equipment, and activities associated with neighborhoods and schools (i.e., lawn mowing, leaf blowing, and children playing) (City of Livermore 2015).

Policy N-1.2 P5 requires the City to minimize exposure of neighboring properties to excessive construction noise. Policy N-1.5 P1 and P2 set the following limits for exterior noise during temporary construction activities: 55 dBA L50 (7:00 a.m. to 10:00 p.m.) and 45 dBA L50 (10:00 p.m. to 7:00 a.m.), with allowable exceedances of these levels of 5 dBA for a cumulative period of no more than fifteen (15) minutes in any hour, 10 dBA for a cumulative period of no more than five (5) minutes in any hour, and 15 dBA for a cumulative period of no more than one (1) minute in any hour. Furthermore, Policy N-1.5 P3 restricts temporary construction from exceeding these noise standards by more than 15 dBA for any period of time. Policy N-1.5 P4 exempts the following noise sources from the above restrictions: motor vehicles on public streets; and temporary construction, maintenance, or demolition activities conducted between the hours of 7:00 a.m. and 8:00 p.m.

LMC

LMC Chapter 9.36 provides restrictions and regulations for noise within the City. LMC Section 9.36.080 prohibits the use of any pile driver, pneumatic tool, derrick, electric hoist, sandblaster or other equipment used in construction, demolition, or other repair work, the use of which is attended by loud or unusual noise, between the hours of 6:00 p.m. Saturday to 7:00 a.m. Monday; 8:00 p.m. to 7:00 a.m. on Monday, Tuesday, Wednesday, and Thursday; 8:00 p.m. Friday to 9:00 a.m. on Saturday; and at all on City-observed holidays. LMC does include exceptions that provide a city engineer and/or builder with the authority to authorize construction activities during prohibited hours for the following reasons:

1. A public agency, other than the City, requires as a condition of a permit that the construction be done during the restricted hours.
2. Public health, safety or welfare requires the work to be done during the restricted hours.
3. Specific construction activities (such as large concrete foundation pours) can be identified and approved to occur as an exemption to this ordinance in the conditions of approval for a project at the time of the public hearing.

Noise Level Increases over Ambient Noise Levels

The operational and construction noise limits used in this analysis are set at reasonable levels at which a substantial noise level increase as compared to ambient noise levels would occur. Operational noise limits are lower than construction noise limits to account for the fact that permanent noise level increases associated with continuous operational noise sources typically result in adverse community reaction at lower magnitudes of increase than temporary noise level increases associated with construction activities that occur during daytime hours and do not affect sleep. Furthermore, these noise limits are tailored to specific land uses; for example, the noise limits for residential land uses are lower than those for commercial land uses. The difference in noise limits for each land use indicates that the noise limits inherently account for typical ambient noise levels associated with each land use. Therefore, an increase in ambient noise levels that exceeds these absolute limits would also be considered a substantial increase above ambient noise levels. As such, a separate evaluation of the magnitude of noise level increases over ambient noise levels would not provide additional analytical information regarding noise impacts and therefore is not included in this analysis.

Impact Analysis

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

Construction activity would generate temporary noise in the project vicinity, exposing surrounding sensitive receivers to increased noise levels. Project construction noise would be generated by heavy-duty diesel construction equipment used for site preparation, excavation/grading, construction, and paving activities. Each phase of construction has a specific equipment mix and associated noise characteristics, depending on the equipment used during that phase. Construction noise would typically be higher in the morning during the more equipment-intensive phases (i.e., site preparation work) and would be lower later in each day during the construction and paving phases. No buildings would be constructed, and the project would not result in unanticipated growth in the vicinity. As such, no change to existing ambient noise would result from the project.

The LMC does not establish noise level limits for construction occurring between the hours of 7:00 a.m. and 8:00 p.m. In the absence of applicable local noise level limits, this analysis references guidance from the FTA *Transit Noise and Vibration Impact Assessment Manual* to establish a quantified threshold against which to assess the impact of construction noise; FTA recommends that reasonable noise criteria may include those shown in Table 10. Construction would be limited to between the hours of 7:00 a.m. and 8:00 p.m.; therefore, daytime noise criteria would be appropriate.

Table 10 Construction Noise Criteria

Land Use	Daytime L_{eq} (8-hour)	Nighttime L_{eq} (8-hour)
Residential	80	70
Commercial	85	85
Industrial	90	90

Source: FTA 2018

To determine impacts, noise is estimated at the nearest sensitive receiver. Table 11 demonstrates the typical noise levels associated with heavy construction equipment during phases of construction at distances of 25, 50, and 100 feet from the noise source. While the property boundaries of the nearest sensitive receivers are located within 25 feet from the construction boundary, most structures are located approximately 50 feet from the project alignment, and Table 11 provides construction noise levels up to 100 feet from the noise source to demonstrate how noise from construction equipment attenuates over distance. Noise levels at a distance of 50 feet are provided by the FTA, while the other distances under evaluation are calculated using an attenuation rate of 6 dBA per doubling of distance.

Table 11 Construction Noise Levels

Equipment	Approximate Noise Level at 25 feet (dBA, L_{eq})	Approximate Noise Level at 50 Feet (dBA, L_{eq})	Approximate Noise Level at 100 feet (dBA, L_{eq})
Backhoe	86	80	74
Loader	86	80	74
Paver	91	85	79
Roller	91	85	79
Truck	90	84	78

An attenuation rate of 6 dBA per doubling of distance was used to calculate noise levels at 25 feet and 100 feet.
Source: FTA 2018

As shown in Table 11, noise from construction equipment has the potential to exceed the standard noise criteria of 80 dBA at the receivers located within 50 feet of the project alignment. These impacts would be temporary and would only last during the construction phase. Noise from construction equipment is not anticipated to exceed the standard noise criteria of 80 dBA at receivers located 100 feet or more from the noise source. Although the project would be constructed at approximately 150 LF each day, individual receivers would be exposed to construction equipment noise for a few days over the entire 12-month construction timeline. However, because the project would exceed the FTA construction noise standards at sensitive receivers located within 50 feet of the project alignment, this would be a significant impact and mitigation measures would be required.

Mitigation Measure

NOI-1 Construction Noise Reduction

The following requirements are required to reduce construction noise:

- Prior to the start of and for the duration of construction, the contractor shall properly maintain and tune all construction equipment in accordance with the manufacturer's recommendations to minimize noise emissions.
- Prior to use of any construction equipment, the contract shall fit all equipment with properly operating mufflers, air intake silencers, and engine shrouds no less effective than as originally equipped by the manufacturer.
- During construction, the construction contractor shall place stationary construction equipment and material delivery (loading/unloading) areas to maintain the greatest distance from the nearest residences, or within noise reducing enclosures.
- The construction contractor shall post a sign along the work alignment that is clearly visible to the public, providing a contact name and telephone number for filing a noise complaint.
- These measures shall be listed on all grading plans and monitored by the City of Livermore during construction.

For noise sensitive uses, implementation of Mitigation Measure NOI-1 would reduce construction noise impacts to a less than significant level. This mitigation measure will be listed in the Supplemental EIR's executive summary and included in the project's mitigation monitoring and reporting program. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Project construction would intermittently generate vibration on and adjacent to the alignment, which has the potential to create human annoyance and damage buildings at high levels. Unlike construction noise, vibration levels are not averaged over time to determine their impact. The most important factors are the maximum vibration level and the frequency of vibratory activity. Therefore, it is appropriate to estimate vibration levels at the nearest distance to sensitive structures that equipment could be used, even though this equipment would typically be located farther from receivers. Vibration-generating equipment may include bulldozers and loaded trucks to move materials and debris, and vibratory rollers for paving. It is assumed that pile drivers, which generate strong ground borne vibration, would not be used during construction because no structures would be built. Table 12 outlines expected vibration levels for vibration-generating equipment that may be used during project construction. Such equipment would be operated on a transient basis.

While the property boundaries of the nearest sensitive receivers are located within 25 feet from the construction boundary, it is anticipated that most structures are located at least 50 feet from the project alignment.

Table 12 Vibration Levels for Construction Equipment at Noise-Sensitive Receivers

Equipment	PPV (in/sec) at 25 feet	L_v (VdB) at 25 feet
Vibratory Roller	0.210	94
Loaded Trucks	0.076	86

Source: FTA 2018

As shown in Table 12, construction equipment would generate peak vibration levels ranging from 0.076 in/sec PPV to 0.210 in/sec PPV at the property boundaries of the nearest sensitive receivers, which would be barely perceptible to humans based on the information provided in Table 9, *Vibration Annoyance Potential Criteria.* These vibration levels would exceed the maximum vibration levels for preventing damage to historic sites and to residential buildings with plastered walls, but would not exceed the maximum vibration levels for preventing damage to residential buildings in good repair with gypsum board walls (refer to Table 8, *AASHTO Maximum Vibration Levels for Preventing Damage*). As discussed in Environmental Checklist Section 5, *Cultural Resources*, there are no historic structures within 25 feet of the project alignment. Similarly, it is anticipated that most residential and commercial structures are located at least 50 feet from the project alignment, which would reduce vibration to less than significant levels.

As required by LMC Chapter 9.36, construction activity would be limited to daytime hours and would not disrupt residential receivers during recognized hours of sleep. Overall, vibration caused by project construction would result in a less than significant impact.

There would be no groundborne vibration generated by project operation.

This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

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

According to Figure 3-2 of the Livermore Municipal Airport Land Use Compatibility Plan, the project would not be located within the 55 CNEL, 60 CNEL, or 65 CNEL Noise Contour (County of Alameda 2012). There are no private airstrips in the project vicinity and the project would not introduce a new noise sensitive land use. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airports or a private airstrip. No impact would occur and this topic will not be discussed in the Supplemental EIR.

NO IMPACT

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14 Population and Housing

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:					
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	N/A	No	No	No	N/A
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	N/A	No	No	No	N/A

1997 EIR Summary

The 1997 EIR does not address the issue area of population and housing.

Setting

Livermore has an estimated population of 91,216 with 33,004 housing units (Department of Finance [DOF] 2021). The average number of persons per household is estimated at 2.85 (DOF 2021). The Association of Bay Area Governments (ABAG) provides projections for households in Livermore through the year 2040 and in Alameda County through the year 2050. ABAG projects there to be 112,905 households in Livermore by 2040 and 847,000 households in Alameda County by 2050 (ABAG 2021).

Impact Analysis

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project would not involve the construction of new residences or businesses, nor would it extend existing roadways. The project would involve the construction of sanitary sewer infrastructure intended to support existing uses and serve existing development potential consistent with the vision of the General Plan and SLVSP. The project would not support uses that are not consistent with the City's General Plan, SLVSP, or current zoning. The project would not cause unanticipated growth in the City. Therefore, the project would not induce substantial unplanned growth, directly or indirectly. Impacts to population or housing would be less than significant. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

There are residences alongside the project alignment; however, the project alignment is entirely within paved rights-of-way. The project would not involve the demolition of existing residences and would not displace existing housing units or people. No impact would occur. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

15 Public Services

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
	1 Fire protection?	EIR Pages 4.9-23 through 25 and 4.9-28	No	No	No	N/A
	2 Police protection?	EIR Pages 4.9-29 through 4.9-30	No	No	No	N/A
	3 Schools?	EIR Pages 4.9-40 through 4.9-41	No	No	No	N/A
	4 Parks?	EIR Page 4.9-36 through 4.9-38	No	No	No	N/A
	5 Other public facilities?	EIR Page 4.9-42 through 4.9-43	No	No	No	N/A

1997 EIR Summary

Chapter 4.9 (Public Services) of the 1997 EIR analyzes the existing SLVSP's impacts related to public services. The 1997 EIR determined that impacts related to all public services would be less that significant. As a result, public services mitigation measures were not required.

Setting

The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for fire prevention and suppression in the project vicinity (CAL FIRE 2007). The Livermore-Pleasanton Fire Department (LPFD) acts as first responders to hazardous materials incidents, rescue emergencies, and medical emergencies (including injury accidents) within the City and project vicinity (LPFD 2021). The LPFD operates five fire stations in the City and operates five additional fire stations along with one fire headquarters and one training facility in the City of Pleasanton, located west of Livermore. In addition to fire and emergency response, LPFD also participates in development activities in the City by reviewing Planning Division projects and inspecting new construction and tenant improvements through the Fire Prevention Division (LPFD 2021). The LPFD's goal is an overall response time of 5 minutes, 90 percent of the time.

The Livermore Police Department (LPD) provides police protection services in the City. The City has four area commands for LPD. The project alignment along most of the western portion of South Livermore Avenue is located between the District 1 and District 3 boundaries, East Avenue is within the District 3 boundaries, and the eastern portion of South Livermore Avenue in addition to all of Buena Vista Road, Greenville Road, and Tesla Road fall just outside of the District 3 boundaries (City of Livermore 2021b). As such, the Alameda County Sheriff's Office shares jurisdiction over the project alignment, specifically providing police protection services to a portion of South Livermore Avenue and all of Buena Vista Avenue, Tesla Road, and Greenville Avenue. The LPD Headquarters is located approximately 0.47-mile northwest of the portion of the proposed project on South Livermore Avenue (Alameda County Sheriff's Office 2022).

Livermore Valley Joint Unified School District serves more than 13,900 students in transitional kindergarten through 12th grade at nine elementary campuses, two K-8 schools, three middle schools, two comprehensive high schools, and two alternative schools throughout Livermore Valley (Livermore School District 2022).

The Livermore Public Library currently operates one main facility, the Civic Center Library, and three branch facilities in the City of Livermore: Rincon Library, Springtown Library, and Springtown Easy Access. The nearest library facility to the project alignment is the Civic Center Library, located at 1188 South Livermore Avenue, adjacent to the westernmost portion of the project alignment.

Impact Analysis

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives?

The project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the vision of the General Plan and SLVSP. Project implementation would not increase the demand for fire or police services beyond what is anticipated in the City's General Plan and SLVSP. Therefore, the project would not cause substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities. Similarly, the project would not increase the number of students attending schools operated by the Livermore Valley Joint Unified School District and would not require the construction of new school facilities. The project would not involve construction of residences and would not generate new jobs in the City; therefore, the project would not result in impacts to Livermore library services or facilities, or other public facilities in City. No impacts to would occur. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Please refer to Environmental Checklist Section 16, *Recreation*, for an analysis of impacts related to parks and recreation resources. No impacts to parks or recreational facilities would occur. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

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16 Recreation

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
a.	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	EIR Page 4.9-36 through 4.9-38	No	No	No	N/A
b.	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	EIR Page 4.9-36 through 4.9-38	No	No	No	N/A

1997 EIR Summary

Chapter 4.9 (Public Services) of the 1997 EIR analyzes the existing SLVSP's impacts on existing recreational facilities. The 1997 EIR determined that impacts related to recreational facilities would be less that significant. As a result, recreation mitigation measures were not required.

Setting

The City of Livermore owns and operates several small parks within the city limits. However, parks and recreational facilities in the City are primarily managed by the Livermore Area Recreation and Park District (LARPD), formed as an independent special district in 1947 by vote of the public. LARPD is responsible for providing public park operation and maintenance for local and regional parks and recreation services to the City of Livermore and surrounding unincorporated areas of South Livermore Valley and north Livermore (County of Alameda 2013). LARPD is responsible for the management of approximately 1,949 acres of parks, trails, and open space; 153.3 acres are dedicated to Neighborhood Parks, 152.4 acres are dedicated to Community Parks, and 199 acres are dedicated to Special Use Facilities/Parks (LARPD 2016).

Parks and recreation facilities operated and maintained by LARPD nearest the proposed project include Ernie Rodrigues Softball Fields, located adjacent to the project alignment on South Livermore Avenue, and Robertson Park, located on Robertson Park Road approximately 600 feet west of the project alignment along South Livermore Avenue. Additional parks and recreation facilities located in the project vicinity include Civic Center Park, located adjacent to the project alignment on South Livermore Avenue next to the Public Library, Bothwell Park and Playground, located on 7th Street approximately 150 feet west of the project alignment along South Livermore Avenue, Robert Livermore Park, located on East Avenue approximately 0.2 mile west of the easternmost location of the Bottleneck Project on East Avenue near Buena Vista Avenue, Almond Avenue Neighborhood Park, located approximately 0.3 mile west of the project alignment along Buena Vista Avenue, Livermore Skatepark, located on Pacific Avenue approximately 0.4 mile east of the project alignment along South Livermore Avenue, and, Bruno Canziani Neighborhood Park,

located on Charlotte Way approximately 0.5 mile east of the project alignment along Buena Vista Avenue. An existing shared-use path, the Arroyo Mocho Bike Trail, also runs along the project alignment on the southern side of the eastern portion of South Livermore Avenue. The Arroyo Mocho Bike Trail continues along the southern side of Tesla Avenue before turning north on Buena Vista Avenue and connecting to Bruno Canziani Neighborhood Park.

Impact Analysis

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The shared use Arroyo Mocho Bike Trail on South Livermore Avenue and Tesla Road would remain open and usable during project construction because they are not located within the project alignment, and project implementation would not permanently alter the Arroyo Mocho Bike Trail.

The project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP. Additionally, the project would not involve construction of residences and would not generate new jobs in the City. Therefore, the project would not increase the demand for existing recreational services. Furthermore, the project would not include the construction or expansion of additional public recreation facilities. As such, the project would not result in impacts related to recreation. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

17 Transportation

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:						
a.	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	EIR page 4.5-59 through 4.5-67	No	No	No	Yes
b.	Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	N/A	No	No	No	N/A
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	EIR page 4.5-62 through 4.5-63	No	No	No	N/A
d.	Result in inadequate emergency access?	N/A	No	No	No	N/A

1997 EIR Summary

Chapter 4.5 (Transportation and Circulation) of the 1997 EIR analyzes the existing SLVSP's impacts on traffic, pedestrian conditions, and parking availability. The 1997 EIR does not address the issue areas of consistency with CEQA Guidelines Section 15064.3, subdivision (b) or the adequacy of emergency access. The 1997 EIR determined that transportation impacts related to intersections and transit would be less that significant. Furthermore, all other impacts were determined to be potentially significant or significant and unavoidable in Subareas 1 and 2. Mitigation measures that were incorporated in the 1997 EIR to reduce potentially significant transportation impacts are summarized below:

Mitigation Measure 4.5-4

Implementation of Draft Plan Policy 5-28, regarding the City's encouragement of the County's traffic calming program for Buena Vista Avenue, supports the neighborhood's efforts to reduce volumes and slow speeds on Buena Vista Avenue. The following mitigation measure would be required to supplement Policy 5-38:

- The City shall work with the County to continue monitoring traffic patterns on Buena Vista Avenue. Traffic shall be monitored at least once a year until cumulative traffic conditions have stabilized for a period of three years. Stabilized shall be defined as vehicle speed and vehicle volume counts not increasing by more than ten percent for a given three-year period. If trips on Buena Vista Avenue increase to more than 2,000 trips per day (the conservative environmental capacity of the roadway) or if the 85th percentile speed of traffic on the roadway exceeds 30 miles per hour, the City will work cooperatively with the County to implement traffic calming

measures to reduce the volume and speed of vehicles to those levels. Traffic calming measures which will be considered include those outlined in the County's adopted traffic calming program, such as the particular following examples:

- Planting street trees close to the roadway / Residential Neighborhood Gateways
- Speed enforcement (Neighborhood Speed Watch Program)
- Road and speed humps
- Turn lane restrictions

- The City will advocate increasingly stringent traffic calming measures until the above-stated standards are met.

Mitigation Measures 4.5-6(a)

Where trails cross roadways, trail crossings shall be designated to the standard set forth in the Livermore Bicycle/Pedestrian Plan Update and Equestrian Trails Study. Subarea developers should work with LARPD and the City and County Publics Works Departments on crossing design. Trail/roadway crossings are planned at the following locations:

- Subarea 2 midway along the central collector
- Subarea 2 all farm compound access drives
- Tesla Road at southwest edge of Subarea 2

Mitigation Measures 4.5-6(b)

Subarea developers should work with the City Public Works Department and LARPD to plan, design, and construct the segments of the Bicycle/Pedestrian Plan facilities, which run adjacent to subarea frontage but are not included in the Draft Plan. Subarea developers should pay for the improvements along the subarea frontage. The facilities include:

- Bicycle lanes on South Vasco Road along Subarea 1 and 2 frontages
- Multi-use trial on South Vasco Road between southern entrance to Subarea 2 and Tesla Road
- Bicycle lanes and multi-use trail on Tesla Road between Subarea 1 southeast corner and north-south trail connection at southwest corner of Subarea 2

Setting

Existing Roadway Network

Regional access to the project alignment is provided by I-580 via North Livermore Avenue and South Vasco Road to the north and by State Route 84/Isabel Avenue via East Stanley Boulevard and Concannon Boulevard to the west. The following descriptions are provided for roadways along the project alignment (City of Livermore 2015).

- **South Livermore Avenue** is a two-lane rural roadway with no curbs, gutters, or sidewalks, identified as a Special Rural Route.[4]

[4] Special rural routes are designated through City-identified vineyard lands and incorporate special road design standards that serve to protect and complement the "wine county" character of the City (City of Livermore 2015). Special Rural Routes follow specific standards regarding width restrictions, landscaping features, and special signs, and typically include combined bike, pedestrian, and equestrian trails that are separated from the roadway.

- **Tesla Road** is a two-lane road that starts at a connection with South Livermore Avenue within the City and stretches approximately 12 miles east, ending at a connection with Corral Hollow Road outside of the City. The roadway is identified as both a Major Street and a Special Rural Route west of Greenville Road and is identified as both a Major Street and an Intercounty Route east of Greenville Road. Tesla Road currently experiences cut-through traffic as a result of freeway congestion.
- **Buena Vista Avenue** is a low-speed, low-capacity residential roadway classified as a Local Street.[5]
- **Greenville Road** begins at a connection with Northfront Road, adjacent to I-580. Portions of the roadway north of Tesla Road are identified as a Major Street and a Special Rural Route, and often experience cut-through traffic as a result of freeway congestion. Portions of the roadway south of Tesla Road are identified as a low-speed, low-capacity Local Street that provides access to existing vineyards and wineries.
- **East Avenue** is located adjacent to the beginning of the proposed project on Buena Vista Avenue and is identified as a Major Street.

Existing Bicycle Facilities

Caltrans classifies bicycle facilities in four ways. The Alameda County Transportation Commission has adopted a sub-set of classifications for each of the four classifications designated by Caltrans to harmonize the previously existing local classification system within Alameda County. The following descriptions are provided for bicycle facilities located within the City with classifications identified by both Caltrans and Alameda County (City of Livermore 2018).

- **Class I Shared Use Paths** are separated with exclusive rights-of-way for two-way bicycling, walking, and other non-motorized uses.
  - **Class IA** are paved paths.
  - **Class IB** are unpaved paths.
- **Class II Bicycle Lanes** are striped, preferential lanes on roadways for one-way bicycle travel.
  - **Class IIA** are conventional bicycle lanes consisting of a single stripe to delineate the lane, stenciled pavement markings, and signs to identify it as a bicycle lane.

Although there are additional subclassifications of Class II Bicycle Lanes within Alameda County, all existing bicycle lanes within the City are classified as Class IIA. The City of Livermore currently maintains 40 miles of Class I Shared Use Paths and 66 miles of Class II Bicycle Lanes (City of Livermore 2018). Existing bicycle facilities located along the project alignment include a Class IA shared use path, the Arroyo Mocho Bike Trail, which runs along the southern side of the eastern portion of South Livermore Avenue. The Arroyo Mocho Bike Trail continues along the southern side of Tesla Avenue before turning north on Buena Vista Avenue and connecting to Bruno Canziani Neighborhood Park. Additional existing bicycle facilities located along the project alignment include a Class II bicycle lane in both directions beginning at the intersection of South Livermore Avenue and 7th Street. This Class II bicycle lane runs southeast down South Livermore Avenue, continuing east onto Tesla Road. The Class II bicycle lane on Tesla Road stops at the intersection with Greenville Avenue but continues north onto Greenville Avenue outside of the project alignment. An additional

[5] Local Streets provide multimodal circulation with direct access to abutting land uses. Street design standards and layouts are typically used to discourage cut-through traffic, avoid high travel speeds and amounts of traffic, and minimize neighborhood noise and safety impacts

Class II bicycle lane exists in both directions on East Avenue between Madison Avenue and Vasco Road, adjacent to the Bottleneck Project.

Existing Pedestrian Facilities

Existing pedestrian facilities in the City consist of sidewalks, pathways, crosswalks, curb ramps, crossing enhancements, and amenities like benches and lighting. The following descriptions are provided for pedestrian facilities located within the City (City of Livermore 2018).

- **Sidewalks** are smooth, even surfaces separated from vehicle travel lanes. Some sidewalks are buffered from the roadway by landscaped areas or other features. Sidewalks vary in width from five to ten feet wide, depending on the adjacent land use.
- **Marked Crosswalks** are guide pedestrians to a preferred path of travel across a street and alert motorists that pedestrians are likely to be crossing at that location.
- **Curb Ramps** assist pedestrians with mobility impairments, pedestrians using assistive devices, and children transitioning from the sidewalk to a crosswalk. They are also intended to support pedestrians with strollers and children riding scooters or skateboards on the sidewalk.
- **Median refuges**, also known as pedestrian refuge islands, provide a safe waiting area for pedestrians in the median of wide, busy streets.
- **Rectangular Rapid Flashing Beacons** are user-actuated amber LEDs that supplement warning signs at uncontrolled intersections and mid-block crosswalks.

The City maintains approximately 566 miles of sidewalks, covering 93 percent of the street network. Approximately 44 miles of roadways have sidewalk on only one side, and approximately 32 miles of roadway lack sidewalks entirely. The City maintains approximately 8,000 curb ramps, with approximately 28 percent of ramps complying with current Americans with Disabilities Act standards.

Existing Public Transit

There are several transit services available in the City, with the Livermore Transit Center serving as the major transfer point for local buses, Altamont Corridor Express trains, Amtrak motor coaches, and Greyhound buses. The Transit Center is located approximately 0.35-mile east of South Livermore Avenue on Railroad Avenue. The following transit services currently available within the City with routes and stops in the project vicinity are described below (City of Livermore 2015).

- **Livermore Amador Valley Transit Authority** operates the WHEELS Service, providing local public transit to the cities of Dublin, Livermore, Pleasanton, and to the adjacent unincorporated areas of Alameda County.
- **Altamont Commuter Express** provides passenger rail service from Stockton to San Jose through the Altamont Pass.

The Livermore Amador Valley Transit Authority offers fixed route services that operate seven days per week between the hours of 4:30 a.m. and 12:30 a.m. Route 14 (Pleasanton-Livermore) maintains one stop on the corner of East Avenue and 7th Street, adjacent to the Bottleneck Project. Additionally, Route 30R (Dublin-Livermore via College) maintains one stop on the corner of East Avenue and Buena Vista Avenue, adjacent to the project alignment. Finally, Route 30X (Vasco) runs along East Avenue, adjacent to the Bottleneck Project, with one stop at the intersection of East

Avenue and Vasco Road, outside of the project alignment. The Altamont Commuter Express provides three morning and three evening trips to the connector stations in Livermore and Pleasanton. The City has two ACE stations: one located on Vasco Road and the other on Railroad Avenue, adjacent to the Transit Center and 0.35-mile east of the project alignment.

Regulatory Setting

SB 743 and Vehicle Miles Traveled

SB 743 was signed into law by Governor Brown in 2013 and tasked the State Office of Planning and Research with establishing new criteria and metrics for identifying and mitigating transportation impacts under CEQA. In January 2018, the Office of Planning and Research transmitted its proposed CEQA Guidelines implementing SB 743 to the California Natural Resources Agency for adoption, and in January 2019 the Natural Resources Agency finalized updates to the CEQA Guidelines, which incorporated SB 743 modifications, and are now in effect (Caltrans 2020). SB 743 changed the way that public agencies evaluate the transportation impacts of project, recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact. In addition to new exemptions for projects consistent with specific plans, the CEQA Guidelines replaced congestion-based metrics, such as auto delay and level of service, with vehicle miles traveled as the basis for determining significant impacts, unless the Guidelines provide specific exceptions.

Alameda County Countywide Transportation Plan

A Countywide Transportation Plan was adopted by the Alameda County Transportation Commission in November 2020, which details a 30-year transportation vision and guides the decision-making of the Alameda County Transportation Commission. The Countywide Transportation Plan serves to improve the transportation system within Alameda County to promote connectivity, sustainability, transit operations, public health, and economic opportunities (County of Alameda 2020).

City of Livermore General Plan 2003 – 2025

The City's Circulation Element contains goals, objectives, and policies focused on regulating and developing transportation systems in the City, such as Goal CIR-1 that ensures all users are provided safe, efficient, comfortable, and convenient mobility and Objective CIR-2.1 that promotes viable alternatives to single-occupant vehicle travel.

City of Livermore Bicycle, Pedestrian, & Trails Active Transportation Plan

The 2018 City of Livermore Bicycle, Pedestrian, and Trails Active Transportation Plan acts as a comprehensive framework to implement network improvements in order to provide quality bicycle and pedestrian facilities that improve mobility, connectivity, public health, physical activity, and recreational opportunities. Overall, the City uses the Plan to increase transportation options, reduce environmental impacts of the transportation system, and enhance the overall quality of life for the Livermore community. The Plan is consistent with, or provides further guidance for, regional plans and policies including the LARPD Master Plan, the East Bay Regional Park District Master Plan, Alameda Countywide Bike Plan and Pedestrian Plan, and Unincorporated Alameda County's Bike Plan and Pedestrian Plan. The Plan also further implements the City's Complete Street Policies set forth in the Livermore General Plan. The Plan provides a vision, goals, and policies that guide decision-making to prioritize and implement the recommended active transportation network improvement projects and programs (City of Livermore 2018).

Impact Analysis

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Project construction would require one lane of public roadways to be closed at any given time. The City would post signage along the alignment and on roadways leading up to the alignment before and during construction to give advance warning of road closures and detours. Access to the transit stops located along East Avenue would be maintained during project construction. Project implementation would not alter the roadways or transit stops, increase commercial or residential development, generate growth, or cause an increase in traffic in the vicinity. Therefore, the project would not impact the overall use of the roadways along the project alignment and would not conflict with the goals, objectives, or policies addressing the circulation system in the City's General Plan Circulation Element.

The Arroyo Mocho Bike Trail would not be impacted during project construction, and project operation would not permanently alter the Arroyo Mocho Bike Trail. An existing Class II bicycle lane runs in both directions along the project alignment on South Livermore Avenue and Tesla Road. Project construction would require closure of one side of the Class II bicycle lane on South Livermore Avenue and Tesla Road at a time. Detour signs would be placed at intersections to facilitate the safe crossing of bicycle lane users when portions of the lane are closed. Additionally, bicycle lane users could be redirected to use the unaffected Arroyo Mocho Bike Trail as needed during project construction. Project operation would not result in permanent closures or long-term impacts to the Class II bicycle lane. Therefore, the project would not conflict with the goals, objectives, or policies addressing bicycle and pedestrian facilities in the City's General Plan Circulation Elements or the City's Bicycle, Pedestrian, & Trails Active Transportation Plan.

Overall, the proposed project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Impacts would be less than significant. Additionally, development on adjacent parcels within the SLVSP area would continue to be required to implement applicable mitigation measures from the 1997 EIR. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3(b) describes criteria for analyzing transportation impacts. The proposed project would not change the existing roadways, increase commercial or residential development in the area, generate growth, or create an increase in traffic in the project vicinity. Project operation would not generate vehicle trips, and there would be no change to existing roadways or increase in vehicle miles travelled. As such, the project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) and no impacts would occur. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The project would be constructed within existing roadways and would not alter or affect the existing street and intersection networks in the vicinity, nor increase hazards due to a new geometric design feature. The proposed project would not introduce incompatible uses, including vehicles or equipment, to the alignment or the surrounding area, and would have no impacts. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

d. Would the project result in inadequate emergency access?

Project construction would require one lane of public roadways to be temporarily closed at any given time. A county-approved traffic control plan would be implemented to regulate worker parking, construction staging, roadway improvements and potential traffic detours during construction. Signage would be posted along the alignment and on roadways leading up to the alignment it before and during construction to give advance warning of road closures and detours. Additionally, lane closures during project construction would only occur along limited segments of the alignment, as approximately 150 linear feet of pipeline would be constructed each day. As a result, the project would not result in inadequate emergency access and impacts would be less than significant. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT IMPACT

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18 Tribal Cultural Resources

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a PRC Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or	N/A	No	No	No	N/A
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	N/A	No	No	No	N/A

1997 EIR Summary

The 1997 EIR does not address the issue area of tribal cultural resources.

Regulatory Setting

AB 52 was enacted in 2015 and expanded CEQA by defining a new resource category: "tribal cultural resources." AB 52 states that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." It further states the lead agency shall establish measures to avoid impacts altering the significant characteristics of a tribal cultural resource, when feasible.

PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

- Listed or eligible for listing in the CRHR or in a local register of historical resources as defined in PRC section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified or adopted. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those having requested notice of projects proposed in the jurisdiction of the lead agency.

Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

The City of Livermore notified culturally affiliated Tribes regarding the project on January 31, 2022. As of the date of this report, no Tribes have requested governmental consultation regarding this project consistent with AB 52. The project would not involve the demolition of existing buildings or structures in the project vicinity. Based on the above, it is assumed no tribal cultural resources are present on the project alignment. However, because the project involves ground disturbance, there is the possibility of encountering undisturbed subsurface tribal cultural resources during construction. Therefore, the project could result in potentially significant impacts to tribal cultural resources and mitigation measures would be required.

Mitigation Measure

TCR-1 Unanticipated Discovery of Tribal Cultural Resources

If cultural resources of Native American origin are identified during project construction, all earth-disturbing work within 50 feet of the find must be temporarily suspended or redirected until an archaeologist has evaluated the nature and significance of the find and an appropriate Native American representative, based on the nature of the find, is consulted. If the City determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared in accordance with state guidelines and in consultation with Native American groups and reviewed and approved by the City prior to implementation. The plan would include avoidance of the resource or, if avoidance of the resource is infeasible, the plan would outline the appropriate treatment of the resource in coordination with the archeologist and the appropriate Native American groups as necessary.

Mitigation Measure TCR-1 would reduce impacts to a less than significant level. This mitigation measure will be listed in the Supplemental EIR's executive summary and included in the project's mitigation monitoring and reporting program. This topic will not be discussed in the Supplemental EIR.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

19 Utilities and Service Systems

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Would the project:						
a.	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	EIR Pages 4.9-6 through 4.9-14 and 4.9-19 through 4.9-21	No	No	No	N/A
b.	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	EIR Pages 4.9-6 through 4.9-14	No	No	No	N/A
c.	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	EIR Pages 4.9-19 through 4.9-21	No	No	No	N/A
d.	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	N/A	No	No	No	N/A
e.	Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	N/A	No	No	No	N/A

1997 EIR Summary

Chapter 4.9 (Public Services) of the 1997 EIR analyzes the existing SLVSP's impacts related to water and wastewater. The 1997 EIR does not address the issues of construction or relocation of stormwater drainage, electric power, natural gas, or telecommunications facilities; sufficient water supplies during normal, dry, and multiple dry years; or of solid waste generation. The 1997 EIR determined that impacts related to water supply would be significant and unavoidable. Furthermore, all other impacts were determined to be less than significant in Subareas 1 and 2. As a result, utility services mitigation measures were not required for development in Subareas 1 and 2.

Impact Analysis

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

d. Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The project would expand wastewater service to parcels adjacent to the proposed alignment. The project could result in a construction-related increase in water demand for dust control, electricity and natural gas demand from equipment use, and solid waste generation from pavement and soil removal. Impacts may be potentially significant. Additionally, the impacts of organics in sewage from wineries on the treatment processes at the Water Reclamation Plant would need to be studied further to determine what level of pre-treatment, if any, is required. This issue will be studied in the Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

20 Wildfire

		Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
If located in or near State responsibility areas or lands classified as very high fire hazard severity zones, would the project:						
a.	Substantially impair an adopted emergency response plan or emergency evacuation plan?	N/A	No	No	No	N/A
b.	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	EIR Pages 4.9-25 through 4.9-27	No	No	No	N/S
c.	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	N/A	No	No	No	N/A
d.	Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	EIR Pages 4.9-25 through 4.9-27	No	No	No	N/A

1997 EIR Summary

Chapter 4.9 (Public Services) of the 1997 EIR analyzes impacts related to wildfire. The 1997 EIR determined that impacts related to wildfire would be less that significant in Subareas 1 and 2. As a result, wildfire mitigation measures were not required for development in Subareas 1 and 2.

Setting

The City of Livermore is not located within a CAL FIRE designated Very High FHSZ (CAL FIRE 2008). The northern and western portions of the project alignment and the Bottleneck Project are within a Local Responsibility Area (LRA). The central and southern portions of the project alignment are within a State Responsibility Area (SRA). The eastern portion of the project alignment, including Greenville Road and a portion of Tesla Road, is located within an area designated as a Moderate FHSZ in an SRA, while a small portion of Tesla Road beginning at Greenville Road is located within an area designated as High FHSZ in an SRA (CAL FIRE 2007). The nearest Very High FHSZ area is located approximately 8.5 miles west of the project alignment within an LRA (CAL FIRE 2008).

Impact Analysis

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Although the project alignment is located in an SRA, the project would be constructed within paved rights-of-way. The project would not result in population growth or expose new residents to wildfire risks. As such, the project would not substantially impair an adopted emergency evacuation plan, exacerbate wildfire risks, require the installation or maintenance of associated infrastructure that may exacerbate fire risk, or expose people or structures to significant risks. Overall, the project would not generate impacts from wildfire hazards. This topic will not be discussed in the Supplemental EIR.

NO IMPACT

21 Mandatory Findings of Significance

	Where was Impact Analyzed in the EIR?	Does the Proposed Project Require Major Revisions to the EIR?	Do New Circumstances Require Major Revisions to the EIR?	Any New Information Resulting in New or Substantially More Severe Significant Impacts?	Do EIR Mitigation Measures Address and/or Resolve Impacts?
Does the project:					
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	N/A	No	No	No	N/A
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	N/A	No	No	No	N/A
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	N/A	No	No	No	N/A

Impact Analysis

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

The project alignment does not contain suitable habitat for fish and wildlife species. Therefore, the project would not substantially reduce the habitat of fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. In addition, as discussed in Environmental Checklist Section 4, *Biological Resources*, Mitigation Measure BIO-1 would reduce impacts to bird and tree species to a less than significant level. This mitigation measure will be listed

in the Supplemental EIR's executive summary and included in the project's mitigation monitoring and reporting program.

The project alignment does not contain important examples of the major periods of California history or prehistory. Therefore, the project would not eliminate these resources. In addition, as discussed in Environmental Checklist Section 5, *Cultural Resources*, and Environmental Checklist Section 7, *Geology and Soils,* no historical, archaeological, or paleontological resources were identified along the alignment. Nevertheless, the potential for the recovery of buried cultural materials during construction remains. Implementation of Mitigation Measure CR-1 would reduce impacts to previously undiscovered cultural resources to a less than significant level by providing a process for evaluating and, as necessary, avoiding impacts to any resources found during construction. Furthermore, Mitigation Measure GEO-1 would reduce potential impacts to paleontological resources. These mitigation measures will be listed in the Supplemental EIR's executive summary and included in the project's mitigation monitoring and reporting program. These topics will not be discussed in the Supplemental EIR.

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b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

As described in the discussion of Environmental Checklist Sections 1 through 20, with respect to all environmental issues, with the exception of water quality for dust control, water supply from facilitated development, and wastewater generation from facilitated development (refer to Environmental Checklist Sections 10 and 19), the proposed project would not result in potentially significant impacts to the environment; anticipated impacts associated with project construction and operation would be either less than significant or less than significant with mitigation incorporated. This is because project construction would be temporary, and project operation would not significantly alter the environmental baseline condition.

Cumulatively considerable impacts could occur if the construction of other projects occurs at the same time as the proposed project and in the same vicinity, such that the effects of similar impacts of multiple projects combine to expose adjacent sensitive receptors to greater levels of impact than would occur under the proposed project. For example, if the construction of other projects in the area occurs at the same time as construction of the proposed project, potential impacts associated with noise and traffic to residents in the project area may be more substantial. There are no major construction projects currently planned in the project vicinity and most of the parcels in the project vicinity are developed. Therefore, construction-related impacts to sensitive receptors are not anticipated.

In addition, cumulative impacts could occur due to indirect growth-inducing impacts, which includes consideration of whether the project would remove an obstacle to additional growth and development. The project would not induce unanticipated growth in the City or surrounding area because it would serve existing development potential consistent with the City's General Plan and SLVSP.

Most project impacts are temporary, localized effects that would occur during construction. Once operational, the project would not have significant adverse environmental impacts or induce development in the area that could combine with other projects' effects to create cumulatively

significant impacts. Therefore, with the exception of water quality and wastewater service, the proposed project would not result in a cumulatively considerable contribution to a significant cumulative impact. Potential cumulative water quality and wastewater service impacts will be addressed in greater detail in the Supplemental EIR.

POTENTIALLY SIGNIFICANT IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in the Environmental Checklist Section 3, *Air Quality*, the project would not result, either directly or indirectly, in substantial adverse effects related to air quality through construction or operation. As discussed in Environmental Checklist Section 9, *Hazards and Hazardous Materials*, project operation would not involve the routine use of extremely hazardous materials. Compliance with applicable regulations during project construction would reduce potential impacts on human beings related to hazards and hazardous materials to a less than significant level. During project construction, noise impacts would be limited to the daytime hours of 7:00 a.m. to 8:00 p.m., and Mitigation Measure NOI-1 would reduce construction noise below applicable thresholds; therefore, construction noise impacts would be temporary and less than significant. Project operation would not increase noise levels. Consequently, operational noise would not significantly impact nearby sensitive receivers. Therefore, the project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Impacts would be less than significant with mitigation. This topic will not be discussed in the Supplemental EIR.

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Rincon Consultants, Inc. prepared this Initial Study under contract to the City of Livermore. Persons involved in data gathering analysis, project management, and quality control are listed below.

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Appendix AQ

Road Construction Emissions Model Inputs and Outputs

Road Construction Emissions Model **Version 9.0.0**
Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	South Livermore Sewer Expansion Project	
Construction Start Year	2024	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	5.00	miles
Total Project Area	12.13	acres
Maximum Area Disturbed/Day	0.05	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00	0.00	2.28
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00		
Asphalt	Grubbing/Land Clearing	20.00		
	Grading/Excavation	20.00		
	Drainage/Utilities/Sub-Grade	20.00		
	Paving	20.00	8.00	8.00

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	12.00	1.20	1/1/2024	1/1/2024
Grading/Excavation	12.00	4.80	1/1/2024	12/31/2024
Drainage/Utilities/Sub-Grade	12.00	4.20	1/1/2024	12/31/2025
Paving	12.00	1.80	1/1/2024	12/31/2026
Totals (Months)	48			

Please note: You have entered a different number of months than the project length shown in cell D16.
Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation	40.00			1	40.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving				0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grading/Excavation (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.04	0.32	0.01	0.00	0.00	150.28	0.00	0.02	157.32
Tons per const. Period - Grading/Excavation	0.00	0.00	0.04	0.00	0.00	0.00	19.84	0.00	0.00	20.77
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.04	0.00	0.00	0.00	19.84	0.00	0.00	20.77

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing				0	0.00
Miles/round trip: Grading/Excavation				0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00
Miles/round trip: Paving	40.00			1	40.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grading/Excavation (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.04	0.32	0.01	0.00	0.00	150.28	0.00	0.02	157.32
Tons per const. Period - Paving	0.00	0.00	0.04	0.00	0.00	0.00	19.84	0.00	0.00	20.77
Total tons per construction project	0.00	0.00	0.04	0.00	0.00	0.00	19.84	0.00	0.00	20.77

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip	11		Calculated Daily Trips	Calculated Daily VMT
One-way trips/day	2			
No. of employees: Grubbing/Land Clearing	4		8	88.00
No. of employees: Grading/Excavation	4		8	88.00
No. of employees: Drainage/Utilities/Sub-Grade	1		2	22.00
No. of employees: Paving	4		8	88.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.01	0.84	0.06	0.05	0.02	0.00	306.70	0.00	0.01	308.54
Grading/Excavation (grams/mile)	0.01	0.84	0.06	0.05	0.02	0.00	306.70	0.00	0.01	308.54
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.84	0.06	0.05	0.02	0.00	306.70	0.00	0.01	308.54
Paving (grams/mile)	0.01	0.84	0.06	0.05	0.02	0.00	306.70	0.00	0.01	308.54
Grubbing/Land Clearing (grams/trip)	0.98	2.66	0.27	0.00	0.00	0.00	65.99	0.07	0.03	76.61
Grading/Excavation (grams/trip)	0.98	2.66	0.27	0.00	0.00	0.00	65.99	0.07	0.03	76.61
Draining/Utilities/Sub-Grade (grams/trip)	0.98	2.66	0.27	0.00	0.00	0.00	65.99	0.07	0.03	76.61
Paving (grams/trip)	0.98	2.66	0.27	0.00	0.00	0.00	65.99	0.07	0.03	76.61
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.02	0.21	0.02	0.01	0.00	0.00	60.67	0.00	0.00	61.21
Tons per const. Period - Grubbing/Land Clearing	0.00	0.03	0.00	0.00	0.00	0.00	8.01	0.00	0.00	8.08
Pounds per day - Grading/Excavation	0.02	0.21	0.02	0.01	0.00	0.00	60.67	0.00	0.00	61.21
Tons per const. Period - Grading/Excavation	0.00	0.03	0.00	0.00	0.00	0.00	8.01	0.00	0.00	8.08
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.05	0.00	0.00	0.00	0.00	15.17	0.00	0.00	15.30
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	2.00	0.00	0.00	2.02
Pounds per day - Paving	0.02	0.21	0.02	0.01	0.00	0.00	60.67	0.00	0.00	61.21
Tons per const. Period - Paving	0.00	0.03	0.00	0.00	0.00	0.00	8.01	0.00	0.00	8.08
Total tons per construction project	0.01	0.09	0.01	0.00	0.00	0.00	26.03	0.00	0.00	26.26

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
User Input								
Grubbing/Land Clearing - Exhaust	1		1.00			15.00		15.00
Grading/Excavation - Exhaust	1		1.00			15.00		15.00
Drainage/Utilities/Subgrade	1		1.00			15.00		15.00
Paving	1		1.00			15.00		15.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grading/Excavation (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.01	0.13	0.00	0.00	0.00	56.35	0.00	0.01	59.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.02	0.00	0.00	0.00	7.44	0.00	0.00	7.79
Pounds per day - Grading/Excavation	0.00	0.01	0.13	0.00	0.00	0.00	56.35	0.00	0.01	59.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	7.44	0.00	0.00	7.79
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.01	0.13	0.00	0.00	0.00	56.35	0.00	0.01	59.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.02	0.00	0.00	0.00	7.44	0.00	0.00	7.79
Pounds per day - Paving	0.00	0.01	0.13	0.00	0.00	0.00	56.35	0.00	0.01	59.00
Tons per const. Period - Paving	0.00	0.00	0.02	0.00	0.00	0.00	7.44	0.00	0.00	7.79
Total tons per construction project	0.00	0.01	0.07	0.00	0.00	0.00	29.76	0.00	0.00	31.15

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing			0.46	0.06	0.10	0.01
Fugitive Dust - Grading/Excavation			0.46	0.06	0.10	0.01
Fugitive Dust - Drainage/Utilities/Subgrade			0.46	0.06	0.10	0.01

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.18	3.27	1.40	0.07	0.06	0.01	500.27	0.16	0.00	505.66
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Graders	0.35	1.66	4.16	0.13	0.12	0.01	640.51	0.21	0.01	647.41
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.14	2.24	1.45	0.07	0.06	0.00	301.77	0.10	0.00	305.01
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	0.68	7.16	7.01	0.27	0.25	0.01	1,442.54	0.47	0.01	1,458.08
Grubbing/Land Clearing	tons per phase	0.09	0.94	0.92	0.04	0.03	0.00	190.42	0.06	0.00	192.47

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.18	3.27	1.40	0.07	0.06	0.01	500.27	0.16	0.00	505.66
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Graders	0.35	1.66	4.16	0.13	0.12	0.01	640.51	0.21	0.01	647.41
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.14	2.24	1.45	0.07	0.06	0.00	301.77	0.10	0.00	305.01
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grading/Excavation	pounds per day	0.68	7.16	7.01	0.27	0.25	0.01	1,442.54	0.47	0.01	1,458.08
Grading/Excavation	tons per phase	0.09	0.94	0.92	0.04	0.03	0.00	190.42	0.06	0.00	192.47

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.50	3.25	3.33	0.12	0.11	0.01	1,280.35	0.41	0.01	1,294.14
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	0.50	3.25	3.33	0.12	0.11	0.01	1,280.35	0.41	0.01	1,294.14
Drainage/Utilities/Sub-Grade	tons per phase	0.07	0.43	0.44	0.02	0.01	0.00	169.01	0.05	0.00	170.83

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pavers	0.18	2.89	1.74	0.08	0.07	0.00	455.16	0.15	0.00	460.07
1.00			Model Default Tier	Paving Equipment	0.16	2.57	1.50	0.07	0.07	0.00	394.47	0.13	0.00	398.72
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rollers	0.15	1.85	1.52	0.08	0.07	0.00	254.15	0.08	0.00	256.88
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab

Number of Vehicles	Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day	0.55	7.62	5.13	0.25	0.23	0.01	1,154.29	0.36	0.01	1,166.45
Paving	tons per phase	0.07	1.01	0.68	0.03	0.03	0.00	152.37	0.05	0.00	153.97
Total Emissions all Phases (tons per construction period) =>		0.32	3.32	2.97	0.12	0.11	0.01	702.20	0.23	0.01	709.73

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> South Livermore Sewer Expansion Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	0.70	7.38	7.15	0.74	0.28	0.46	0.35	0.25	0.10	0.02	1,559.56	0.47	0.02	1,578.29
Grading/Excavation	0.70	7.42	7.47	0.75	0.29	0.46	0.35	0.26	0.10	0.02	1,709.84	0.47	0.05	1,735.61
Drainage/Utilities/Sub-Grade	0.50	3.32	3.46	0.58	0.13	0.46	0.21	0.11	0.10	0.01	1,351.87	0.41	0.02	1,368.43
Paving	0.58	7.88	5.59	0.27	0.27	0.00	0.24	0.24	0.00	0.01	1,421.59	0.36	0.04	1,443.98
Maximum (pounds/day)	2.49	26.00	23.66	2.35	0.97	1.38	1.15	0.87	0.29	0.06	6,042.86	1.72	0.14	6,126.31
Total (tons/construction project)	0.33	3.43	3.12	0.31	0.13	0.18	0.15	0.11	0.04	0.01	797.66	0.23	0.02	808.67

Notes:

Project Start Year ->	2024
Project Length (months) ->	12
Total Project Area (acres) ->	12
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	88	15
Grading/Excavation	2	0	40	0	88	15
Drainage/Utilities/Sub-Grade	0	0	0	0	22	15
Paving	0	16	0	40	88	15

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> South Livermore Sewer Expansion Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.09	0.97	0.94	0.10	0.04	0.06	0.05	0.03	0.01	0.00	205.86	0.06	0.00	189.00
Grading/Excavation	0.09	0.98	0.99	0.10	0.04	0.06	0.05	0.03	0.01	0.00	225.70	0.06	0.01	207.84
Drainage/Utilities/Sub-Grade	0.07	0.44	0.46	0.08	0.02	0.06	0.03	0.01	0.01	0.00	178.45	0.05	0.00	163.87
Paving	0.08	1.04	0.74	0.04	0.04	0.00	0.03	0.03	0.00	0.00	187.65	0.05	0.01	172.92
Maximum (tons/phase)	0.09	1.04	0.99	0.10	0.04	0.06	0.05	0.03	0.01	0.00	225.70	0.06	0.01	207.84
Total (tons/construction project)	0.33	3.43	3.12	0.31	0.13	0.18	0.15	0.11	0.04	0.01	797.66	0.23	0.02	733.62

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix EN

Energy Fuel Consumption Calculations

South Livermore Sewer Expansion Project

Last Updated: 12/17/2021

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Excavators	1	8	158	0.38	Grubbing/Land Clearing	6,703
Graders	1	8	187	0.41	Grubbing/Land Clearing	8,559
Tractors/Loaders/Backhoes	1	8	97	0.37	Grubbing/Land Clearing	4,454
Graders	1	8	187	0.41	Grading/Excavation	8,559
Excavators	1	8	158	0.38	Grading/Excavation	6,703
Tractors/Loaders/Backhoes	1	8	97	0.37	Grading/Excavation	4,454
Off-Highway Trucks	1	8	402	0.38	Drainage/Utilities/Sub-Grade	17,054
Pavers	1	8	130	0.42	Paving	6,095
Paving Equipment	1	8	132	0.36	Paving	5,305
Rollers	1	8	80	0.38	Paving	3,773
Cement and Mortar Mixers	1	8	9	0.56	Paving	626
					Total Fuel Used	**72,286**
						(Gallons)

Construction Phase	Days of Operation
Grubbing/Land Clearing	264
Grading/Excavation	264
Drainage/Utilities/Sub-Grade	264
Paving	264

WORKER TRIPS

Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Grubbing/Land Clearing	24.1	8	10.8	946.46
Grading/Excavation	24.1	8	10.8	946.46
Drainage/Utilities/Sub-Grade	24.1	2	10.8	236.61
Paving	24.1	8	10.8	946.46
		Total		**3,075.98**

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Grubbing/Land Clearing	7.5	0	20.0	0.00
Grading/Excavation	7.5	2	20.0	5.33
Drainage/Utilities/Sub-Grade	7.5	0	20.0	0.00
Paving	7.5	2	20.0	5.33
		Total		**10.67**
VENDOR TRIPS				
Grubbing/Land Clearing	7.5	2	7.3	513.92
Grading/Excavation	7.5	2	7.3	513.92
Drainage/Utilities/Sub-Grade	7.5	2	7.3	513.92

Paving	7.5	2	7.3	513.92
			Total	**2,055.68**

Total Gasoline Consumption (gallons)	**3,076**
Total Diesel Consumption (gallons)	**74,352**

Sources:

[1] United States Environmental Protection Agency. 2021. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2* . September. Available at: https://www.epa.gov/system/files/documents/2021-08/420r21021.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2021. *National Transportation Statistics* . Available at: https://www.bts.gov/topics/national-transportation-statistics.