



# Sanitary Sewer Condition Assessment Repairs – Package 1 Initial Study & Proposed Mitigated Negative Declaration

December 2022



Sanitary Sewer Condition Assessment Repairs – Package 1  
**Initial Study & Proposed Mitigated Negative Declaration**

December 2022



**City of  
Santa Clara**  
The Center of What's Possible

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**Please cite this document as:**

City of Santa Clara. 2022. Sanitary Sewer Condition Assessment Repairs – Package 1 Initial Study and Proposed Mitigated Negative Declaration. (December.) Santa Clara, CA. Prepared for the City of Santa Clara Public Works Department by Redtail Consulting, Fremont, CA.

**Cover aerial photograph source:** GoogleEarth (imagery date: 03/10/2022, downloaded: 10/25/2022)

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- Appendix B. Biological Resources Technical Report
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- Appendix D. Proposed Mitigated Negative Declaration

*All appendices are incorporated by reference into this document as though set forth herein. No other documents are incorporated by reference.*

# 1

## Introduction

This document is an Initial Study analyzing the environmental impacts of carrying out five sanitary sewer repair projects proposed by the City of Santa Clara (City) as part of its annual sanitary sewer condition assessment repairs program, consistent with the California Environmental Quality Act (CEQA) and the state's *CEQA Guidelines*. As the entity that will make the decision about whether or not to proceed with the projects, the City is serving as the lead agency under CEQA.

Based on the analysis presented in this Initial Study, the City anticipates adopting a Mitigated Negative Declaration for the proposed repair projects. The Mitigated Negative Declaration signifies that although the projects would have the potential for some significant environmental impacts, the City has identified and committed to implement measures to mitigate—that is, to avoid or reduce—those impacts, such that with the mitigation measures in place, no significant short- or long-term impacts are expected as a result of the proposed projects.

### Contents & Organization of this Initial Study

This Initial Study contains the following sections.

- **Section 1 – Introduction:** provides background information; explains the scope of this Initial Study; discusses the need for the projects and identifies project goals and objectives; discusses the need for external permits or approvals to implement each project (none anticipated); summarizes consultation regarding Native American tribal cultural resources; and describes the process and timeline for public review and comment on this Initial Study
- **Section 2 – Project Information:** provides specifics regarding the locations of the proposed repairs analyzed in this Initial Study, the repair activities that are anticipated, and ongoing operations and maintenance of the repaired facilities once repairs are completed
- **Section 3 – Environmental Impacts:** analyzes the impacts of implementing the proposed repairs on the environment and describes the mitigation measures the City will implement to avoid or reduce potentially Significant impacts
- **List of Acronyms and Abbreviations:** presented as an 11 x 17 foldout table following Section 3
- **Appendices:**
  - Appendix A: Air Quality and Greenhouse Gas Emissions Modeling Results
  - Appendix B: Biological Resources Technical Report

- Appendix C: Cultural Resources Technical Report
- Appendix D: Proposed Mitigated Negative Declaration

## Background

The City's Water & Sewer Utility owns and operates a sanitary sewer system that serves close to 120,000 residential, commercial, and industrial customers within City limits and also accepts flows from the neighboring Cupertino Sanitary District under an agreement originally executed in 1985. Wastewater collected in the sewer system is conveyed to the San José–Santa Clara Regional Wastewater Facility, located in the north San José Baylands, for treatment (City of Santa Clara Water & Sewer Utility 2014, City of San José 2019).

The City's sanitary sewer network comprises almost 300 miles of sewer mains ranging from 4 inches to 48 inches in diameter. The majority of the system consists of vitrified clay pipe (VCP), much of which was installed between 1940 and 1980. The system also includes two large pump stations equipped with flow meters (Rabello and Northside Pump Stations) and four smaller unmetered lift stations (Tasman, Westside, Primavera, and De La Cruz Pump Stations). All of the pump stations have radio telemetry enabling remote monitoring of operations (City of Santa Clara Water & Sewer Utility 2014).

In accordance with best practices, the City has instituted an annual condition assessment and repairs program that aims to improve sewer system reliability by proactively identifying maintenance, repair, and replacement needs. Sewer infrastructure is assessed using the National Association of Sewer Service Companies' (NASSCO's) Pipeline Assessment Certification Program (PACP) guidelines, which assigns grades based on the significance of observed defects, damage, deterioration, and operational impairment. Grades 4 and 5 ("most significant defect" and "significant defect", respectively) represent the highest priorities.

The most recent condition assessment was completed in 2020. It covered 92 sewer segments comprising approximately 26,800 linear feet of sewer line, plus the associated manholes. The majority of the segments inspected are within City right-of-way (ROW), but several segments cross into ROW of other jurisdictions, including the Cities of Sunnyvale and Cupertino, the California Department of Transportation (Caltrans), and the Santa Clara Valley Transportation Authority (VTA). Defects identified as a result of this assessment were evaluated and prioritized for repair by City operations and engineering staff, resulting in the identification of 48 repair projects to be completed by 2023.

## Scope of this Initial Study

Many routine utilities maintenance and repair projects qualify for exemption from CEQA review since they have very limited potential to result in significant environmental impacts. Among the exemptions commonly applicable to such projects are

- statutory exemption per Section 15282[k] of the state's *CEQA Guidelines*, which applies to installation, maintenance, repair, and removal of pipelines that are less than 1 mile in length and are located within a public ROW, as long as surface facilities are not involved
- Class 1 categorical exemption per *CEQA Guidelines* Section 15301, which applies to maintenance and repair of existing facilities with "negligible or no expansion of use" (i.e., no increase in capacity)
- Class 2 categorical exemption per *CEQA Guidelines* Section 15302, which applies to replacement or reconstruction of existing facilities in the same location and with "substantially the same purpose and capacity as the structure replaced" (again, no increase in capacity)

When these exemptions are not applicable—for instance, due to “upsizing” to provide increased capacity—utilities repairs commonly make use of the Class 3 categorical exemption per *CEQA Guidelines* Section 15303, which covers various types of new small structures.

The high-priority (Grade 4 and 5) repairs targeted in the 2020 condition assessment were evaluated for CEQA review requirements in 2021, as soon as the City’s design team had identified repair needs and the best repair approaches for each identified defect. Repairs were evaluated as standalone projects since each repair would address a separate, specific problem with a known extent, and each repair would be worth undertaking even if other nearby repairs could not be completed for some reason—that is, each repair satisfies the tests for *logical termini* and *separate and independent utility*.<sup>1</sup> Evaluation also considered the possibility that some projects would be combined and completed as a single undertaking, since they were located in close proximity to one another.

A total of 18 repair projects were found to qualify for the Section 15282[k] statutory exemption (Redtail Consulting 2021a). An additional 23 repair projects found not to qualify for statutory exemption were evaluated for the applicability of one or more categorical exemptions; of these, all but five were found to qualify. The remaining five projects were found ineligible for categorical exemption due to unusual circumstances associated with proximity to sites with known hazardous materials contamination (Redtail Consulting 2021b, Abbe pers. comm.).

This Initial Study was prepared to evaluate the potential environmental impacts of the five proposed sanitary sewer repair projects that do not qualify for statutory or categorical exemption:

- Segment 100, located in Mathew Street west of De La Cruz Boulevard
- Segment 231, located in a utility easement that crosses Lafayette Street just south of Highway 237
- Segments 232 and 233, located within Lafayette Street immediately to the south of Segment 231
- Segment 242, located within Lafayette Street north of Tasman Drive

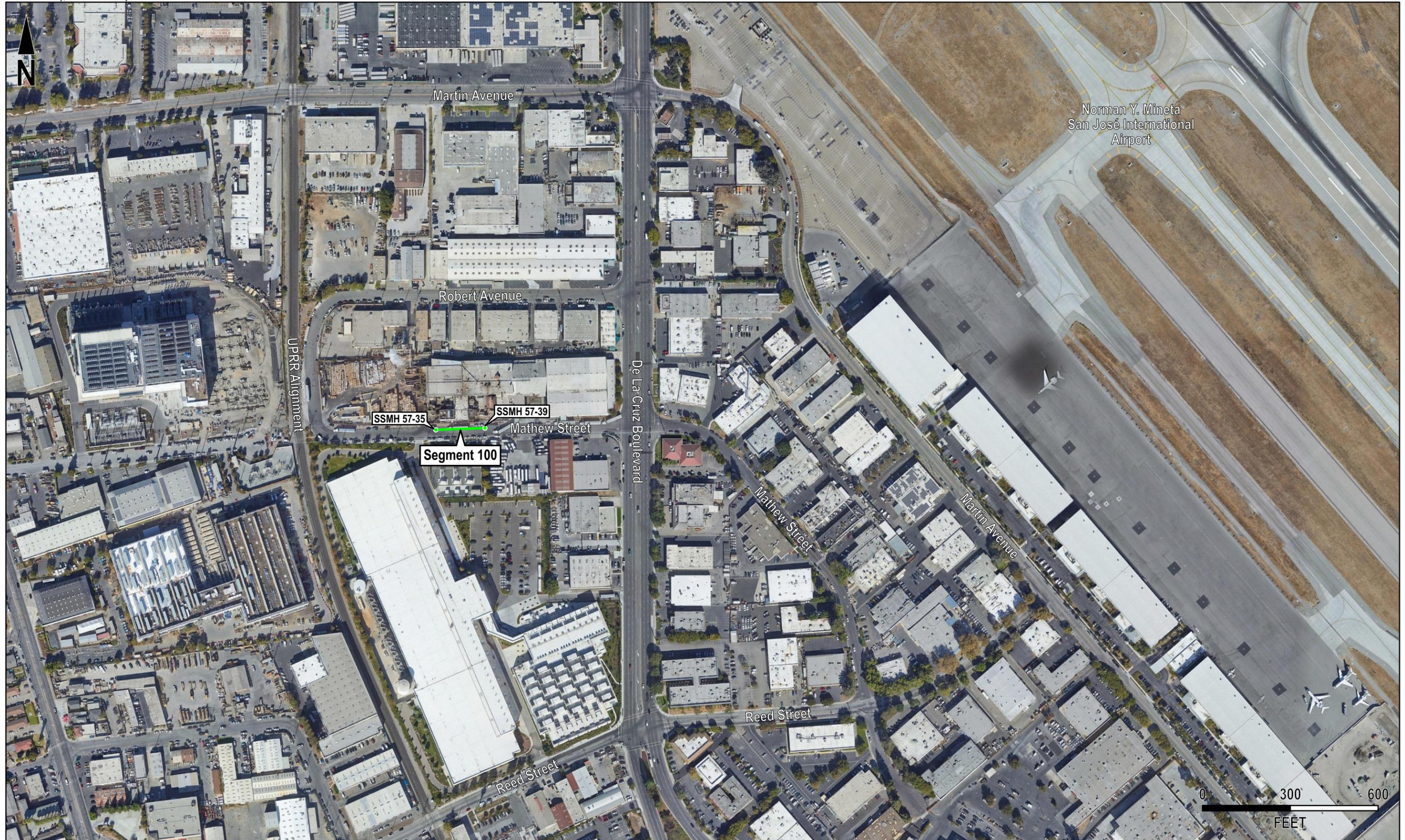
Figures 1 and 2 show the locations of the five repair Segments analyzed in this Initial Study. More information on the proposed repairs, and more detailed figures showing the existing facilities to be repaired, are provided in Section 2 of this Initial Study.

## Need for Projects

Sanitary sewer is an essential component of the services provided by the City for public health and welfare. Proper sewer function is critical to avoid potentially adverse public health and environmental consequences, including contamination of area watercourses as a result of leaks, spills, or overflows. The repair projects analyzed in this Initial Study are needed to address identified Grade 4 and 5 (“significant” and “most significant”) defects that threaten sewer system function, with the potential to impede flow and/or result in leaks, spills, and overflows. Carrying out the proposed repairs is a key aspect of the Water & Sewer Utility’s mission to provide customers with environmentally sound wastewater collection, treatment, and disposal, fulfilling the City’s responsibilities to area residents and businesses.

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<sup>1</sup> The concepts of *separate and independent utility* and *logical termini* are federally defined but are nonetheless useful in assessing whether activities potentially subject to CEQA can be evaluated separately or must be considered as part of a larger, combined undertaking.





## Project Goals & Objectives

The goal of the proposed repair projects at Segments 100, 231 – 233, and 242 is to remedy existing Grade 4 and Grade 5 defects identified in the City’s 2020 sanitary sewer condition assessment.

Specific project objectives include the following.

- Segment 100 (Mathew Street): remove 166 linear feet (LF) of existing 18-inch-diameter VCP sewer line and replace it with 18-inch-diameter polyvinyl chloride (PVC) sewer line; remove and replace sanitary sewer manhole (SSMH) 57-35 at west terminus of Segment
- Segment 231 (Lafayette Street): install 278 LF of cured-in-place-pipe (CIPP) lining in existing 42-inch-diameter reinforced concrete pipe (RCP) sewer line; replace cones of SSMH 114-14 and SSMH 114-23 at termini of Segment
- Segment 232 (Lafayette Street): install 437 LF of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cone of SSMH 104-9 at south terminus of Segment
- Segment 233 (Lafayette Street): install 491 LF of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cone of SSMH 104-15 at south terminus of Segment
- Segment 242 (Lafayette Street): install 430 LF of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cones of SSMH 104-17 and SSMH 104-22 at termini of Segment

## Required Permits & Approvals

All work would occur within City ROW or easement in urbanized portions of the City, and would be well outside the jurisdictional limits of resource agencies such as the U.S. Army Corps of Engineers and California Department of Fish and Wildlife as well as ROW managed by Valley Water (previously the Santa Clara Valley Water District). No Caltrans ROW would be affected. As a result, no external permits or approvals are expected to be necessary to implement the repairs analyzed in this Initial Study.

## Native American Consultation

The state’s *CEQA Guidelines* encourage early consultation with Native American tribes traditionally and culturally affiliated with the area where a proposed project will take place. As part of the cultural resources study conducted for the proposed projects (Appendix C to this Initial Study), the City reached out to the Native American Heritage Commission (NAHC) to verify contacts for tribes traditionally and culturally affiliated with the project area, and sent letters advising those contacts of the upcoming project and soliciting early comments and input on concerns related to tribal cultural resources. No responses were received. A search of the Native American Heritage Commission’s Sacred Lands database was also requested. Results are detailed in Section 3 of this Initial Study under the headings *Cultural Resources* and *Tribal Cultural Resources* and discussed in detail in Appendix C.

In addition to the outreach conducted to provide input to the cultural resources study, Section 21080.3.1 of the CEQA statute (Assembly Bill 52), signed into law in 2015, requires lead agencies to consult with traditionally and culturally affiliated Native American tribes prior to the release of a CEQA document if (1) the tribe has requested, in writing, to be formally notified of projects, and (2) the tribe responds, in writing, within 30 days of receiving notification, and requests consultation. The Tamien Nation is the only tribe that has requested formal notification from the City.

In July 2022, during preparation of this Initial Study, the City sent a formal invitation to engage in government-to-government consultation regarding the proposed projects to the Tamien Nation Chairwoman and Tribal Cultural Resource Officer. Consistent with recommendations of the California Native American Heritage Commission (NAHC) (Native American Heritage Commission 2016) the invitation included

- a brief description of the planned repairs and their locations
- a summary of the cultural resources studies and related outreach that had been conducted to date for the projects
- information on the consultation timeline, including the 30-day window to request consultation, and
- contact information for responsible City staff

In order to ensure that any new information received by the City during consultation could be incorporated and considered in the Initial Study, the invitation also included the City's commitment that the Initial Study would not be released for public review until either (1) consultation was complete, or (2) 30 days following receipt of the invitation had elapsed with no request for consultation. The invitation to engage in consultation was sent in hard copy via certified return-receipt mail and was also transmitted by email. No response was received within the 30-day window, and no response has been received to date (October 2022). The City has accordingly concluded that the Tamien Nation did not feel consultation was warranted for the proposed projects.

## Public Circulation & Comment

The fundamental purposes of CEQA include improving information sharing and enhancing public participation in the planning process. CEQA accordingly requires lead agencies to circulate draft environmental documents for review and comment by other agencies and the public at large. This Initial Study is now being circulated for public and agency review. **The review period begins on December 14, 2022 and will conclude on January 13, 2023.**

Comments on this Initial Study may be provided via letter or email to the City's project manager at the contact to the right. **The deadline for receipt of comments is 5:00 PM, January 13, 2023.** As required by CEQA and the state's *CEQA Guidelines*, all comments received by the comment deadline will be considered by the City in making the decision about whether to adopt the proposed Mitigated Negative Declaration and proceed with the projects.

### Contact for Comments on this Initial Study

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## References Cited in this Section

Abbe, A. (City of Santa Clara, City Attorney's Office). Pers. comm. Email to Falguni Amin and Vincent Luchessi (City of Santa Clara, Department of Public Works). February 17, 2022. On file with Redtail Consulting.

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Redtail Consulting. 2021b. Annual Sanitary Sewer Repairs 2021, 2022, & 2023 Projects – 2021 Construction Package Categorical Exemption Screening. (October.) Prepared for Mott MacDonald, San José, CA and City of Santa Clara. Fremont, CA.

## Project Information

### Project Overview

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Project title:	Sanitary Sewer Condition Assessment Repairs – Package 1
Lead agency name and address:	City of Santa Clara Public Works Department 1500 Warburton Avenue Santa Clara, CA 95050
Project sponsor's name and address:	<i>Same as above</i>
Contact person and phone number:	Vincent Luchessi, PE Senior Civil Engineer 408.615.3048
Project location:	<p>This Initial Study analyzes the effects of five projects under the current phase of the City's annual sanitary sewer repairs program, located as follows:</p> <ul style="list-style-type: none"> <li>• Segment 100, located in Mathew Street west of De La Cruz Boulevard</li> <li>• Segment 231, located in a utility easement that crosses Lafayette Street just south of Highway 237</li> <li>• Segments 232 and 233, located within Lafayette Street immediately to the south of Segment 231</li> <li>• Segment 242, located within Lafayette Street north of Tasman Drive</li> </ul> <p>Figures 1 and 2 show the locations of the projects analyzed in this IS/MND</p>
General Plan land use designation:	<ul style="list-style-type: none"> <li>• Segment 100: within Mathew Street ROW in area designated Heavy Industrial</li> <li>• Segment 231: within easement, primarily in area designated Parks / Open Space; west end of alignment within Lafayette Street ROW</li> <li>• Segment 232: within Lafayette Street ROW; area east of Lafayette Street is designated Parks / Open Space, area immediately west of Lafayette</li> </ul>

Zoning:

- Street is designated Parks / Open Space with High Intensity Office / R&D beyond, remainder of area west of Lafayette Street is Parks / Open Space
- Segments 233 – 242: within Lafayette Street ROW; areas on both sides of Lafayette Street are designated Parks / Open Space
  - Segment 100: within Mathew Street ROW; areas on both sides of ROW are zone MH (Heavy Industrial)
  - Segment 231: PD-MC (Planned Development – Master Community); area immediately west of Lafayette Street is zoned B (Public or Quasi Public) with PD (Planned Development) zoning beyond
  - Segment 232: within Lafayette Street ROW; area to the east is zoned PD-MC (Planned Development – Master Community), area to the immediate west is a narrow strip zoned B (Public or Quasi Public) with PD (Planned Development) zoning farther west
  - Segment 233: within Lafayette Street ROW; area to the east is zoned PD-MC (Planned Development – Master Community), area to the immediate west is a narrow strip zoned B (Public or Quasi Public) with PD (Planned Development) zoning farther west at northernmost end of the alignment, and PD-MC (Planned Development – Master Community) along remainder of alignment
  - Segment 242: Within Lafayette Street ROW; narrow strip along immediate west side of ROW is zoned B (Public or Quasi Public) and remainder of surrounding area is zoned PD-MC (Planned Development – Master Community)

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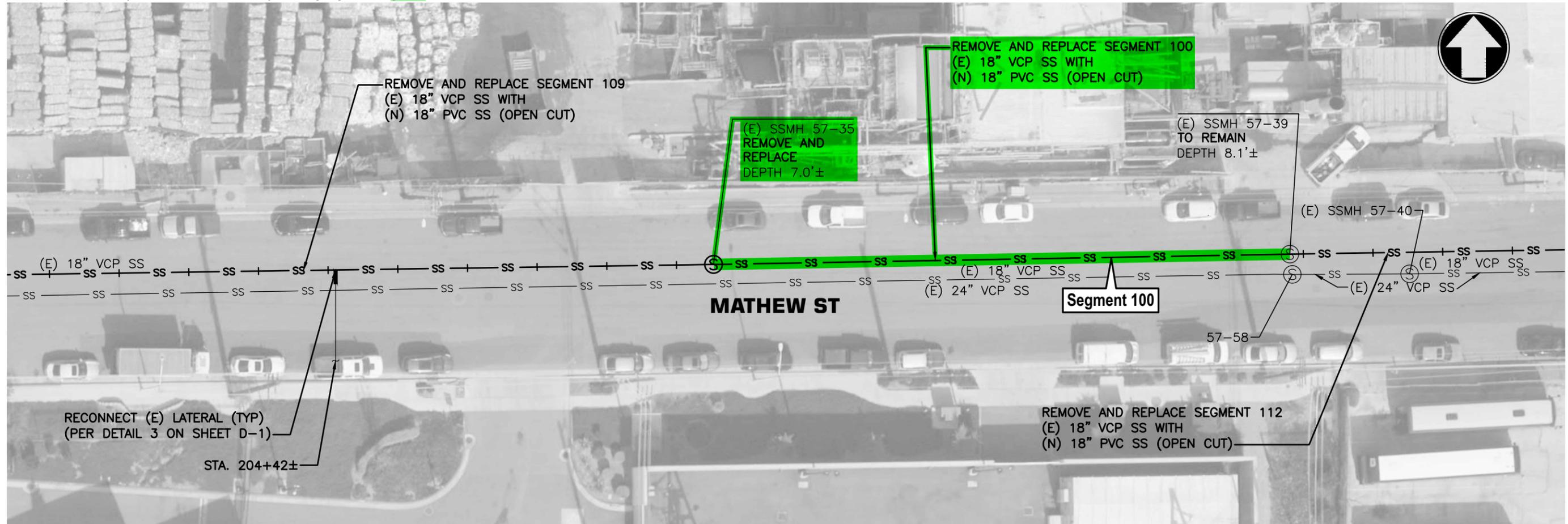
## Project Settings

### Segment 100

Segment 100, located within Mathew Street west of the intersection with De La Cruz Boulevard, is situated in a heavy industrial area flanking Norman Y. Mineta San José International Airport (Figure 1). The alignment itself is about 0.3 mile west of the airport campus. The California Paperboard Corporation's facility at 525 Mathew Street occupies the north side of the block between De La Cruz Boulevard and Robert Avenue to the west. Immediately west of Robert Avenue is a double-tracked rail alignment that accommodates Union Pacific Rail Company (UPRR) freight transport as well as Altamont Corridor Express's (ACE's) Capitol Corridor passenger service. Vegetation along Mathew Street in this heavily industrialized area is limited to landscape plantings (non-native ornamental species) associated with development.

The existing sewer line at Segment 100 consists of 18-inch diameter VCP pipe installed at a depth of approximately 7.5 – 8 feet below ground surface (Figure 3). City SSMH 57-35 (depth approximately 7.5 feet) is located at the west end of the Segment and City SSMH 57-39 (depth approximately 8.1 feet) is located at the east end of the Segment.

**Note:** Repairs analyzed in this Initial Study are highlighted in green.



## Segments 231 – 233

Segment 231 is located in an east-northeast trending City utility easement that crosses Lafayette Street about 500 feet southeast of the State Route (SR) 237 overpass (Figure 2). Segment 232 extends south into Lafayette street from Segment 231, and Segment 233 continues within Lafayette Street immediately south of Segment 232 (Figure 2). The east terminus of Segment 231 is within the parking area associated with the City's Eastside Retention Basin facility, which receives and stores stormwater from Calle del Mundo, Calle del Luna, the Fairway Glen neighborhood, and the area south of Tasman Drive for gradual discharge into the Guadalupe River farther east. The west terminus of Segment 231 is in a disturbed area between Lafayette Street and high-tech industrial park development to the west, which includes facilities of ST Microelectronics, Global Foundries, Dell Technologies, and the molecular diagnostics firm Cepheid. Continuing south from Segment 231, Segments 232 and 233 run between the Santa Clara Police Activities League (PAL) BMX Track on the east side of Lafayette Street, and portions of the 18-hole course of the former Santa Clara Golf & Tennis Club, which extended on both sides of Lafayette Street and is now closed and slated for redevelopment as part of the Related (previously City Place) mixed-use project. Immediately west of Lafayette street, between the roadway and developed and former golf course uses to the west, runs a single-tracked rail corridor shared by Caltrain, ACE, and Amtrak.

As the aerial photograph base of Figure 2 shows, vegetation along Segment 231 is limited to landscape plantings along the north boundary of the PAL BMX Track and in the Lafayette Street median, and ruderal growth adjacent to the Eastside Retention Basin parking area and in the area immediately west of Lafayette Street where the alignment terminates. Farther west are landscape plantings along the edge of the industrial park parking lot. To the south along Lafayette Street, the median continues to support primarily low-growing landscape plantings, with additional landscaping present along the edge of the PAL BMX facility, outboard of extensive mowed grassy areas. Farther south, the alignments are bordered on both sides of Lafayette Street by former golf course landscaping.

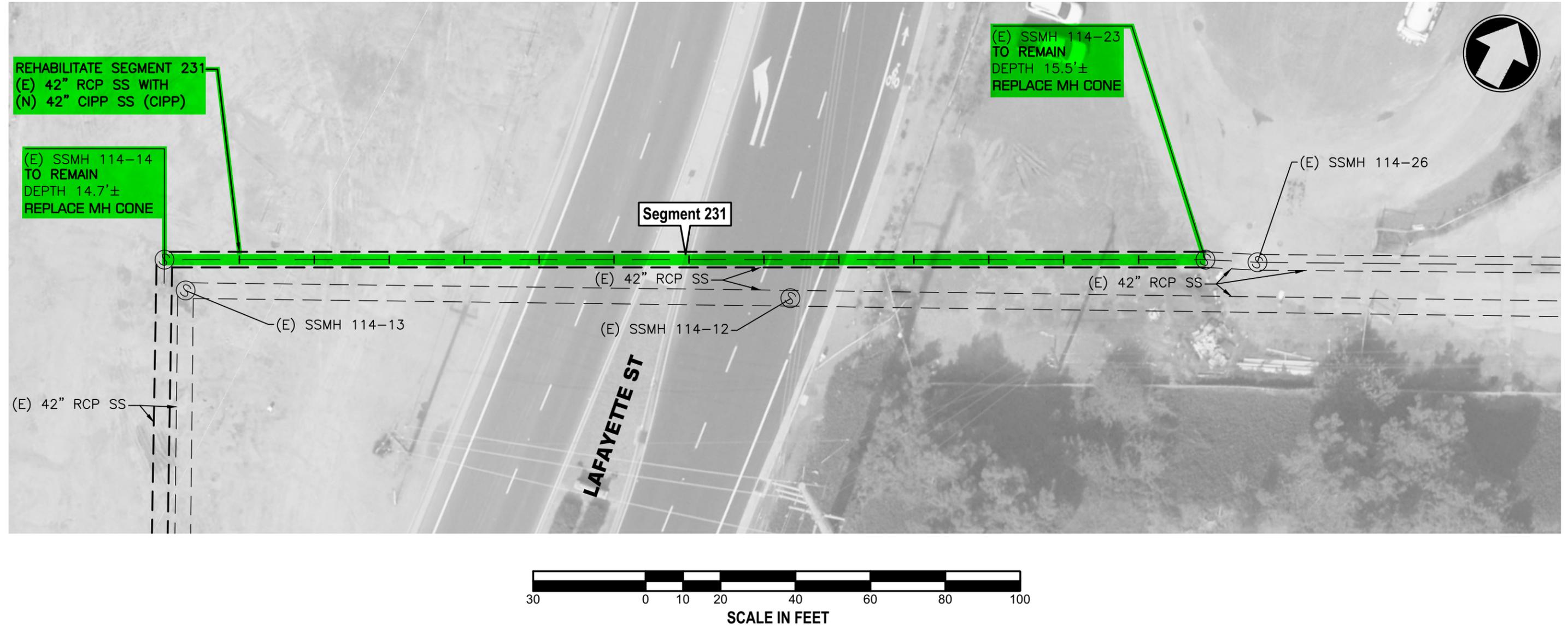
The existing sewer line at Segments 231 – 233 is 42-inch-diameter RCP pipe installed at depths ranging from approximately 14.2 – 15.5 feet below ground surface (Segment 231) to approximately 14.7 – 15 feet below ground surface (Segments 232 and 233) (Figure 4, Figure 5). SSMH 114-23 (depth approximately 15.5 feet) is at the east terminus of Segment 231; SSMH 114-14 (depth approximately 14.7 feet) is at the west terminus. City SSMH 104-9 (depth approximately 15.1 feet) marks the south terminus of Segment 232, and SSMH 104-15 (depth approximately 14.2 feet) is at the south terminus of Segment 233.

## Segment 242

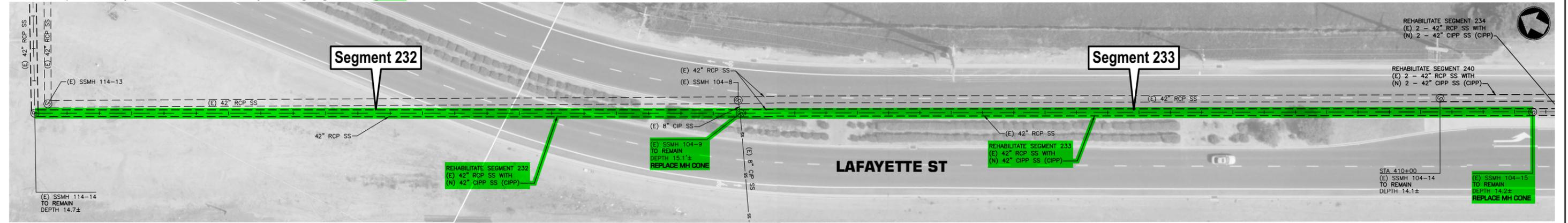
Segment 242 is within Lafayette Street about 1,100 feet north of Calle del Mundo, to the south of Segments 231 – 233 (Figure 2). Here, Lafayette Street is bounded on both sides by the Santa Clara Golf & Tennis Club course.

The existing sewer line at Segment 242 is 42-inch-diameter RCP installed at a depth of approximately 13.9 – 14.5 feet below ground surface (Figure 6). City SSMH 104-17 (depth approximately 14.5 feet) is at the north terminus of Segment 242. SSMH 104-22 (depth approximately 13.9 feet) is at the south terminus.

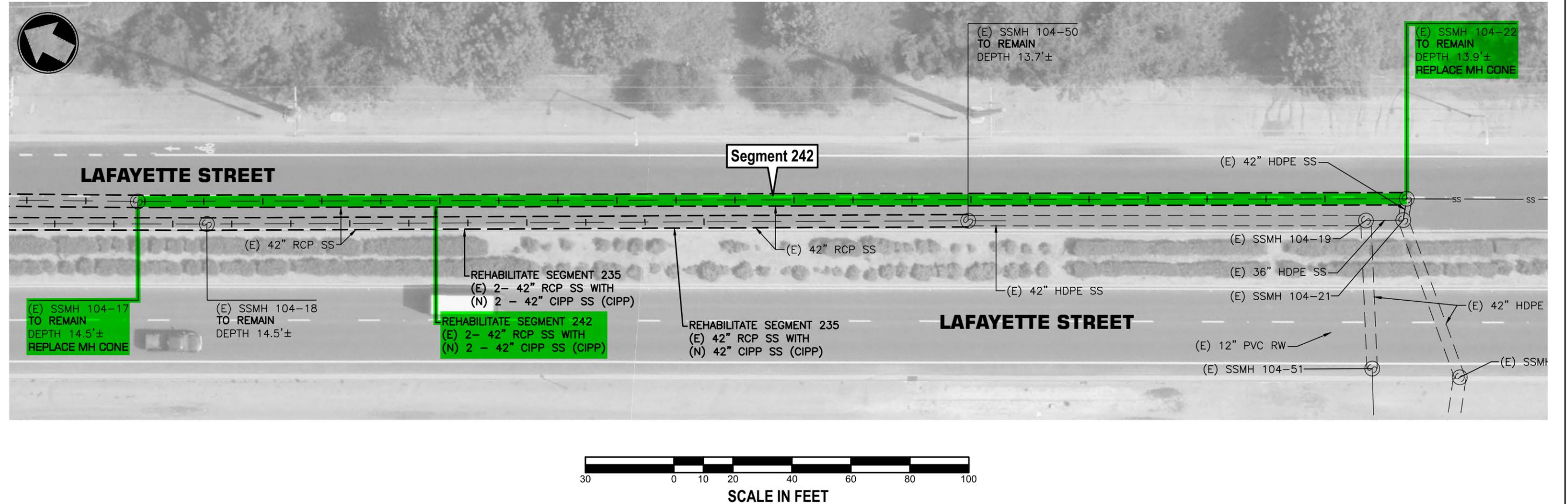
**Note:** Repairs analyzed in this Initial Study are highlighted in green.



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## Project Description

### Overview of Planned Repairs

As identified in Section 1 of this Initial Study and shown schematically in Figures 3 through 6, Segment 100 is planned for open cut replacement and Segments 231 – 233 and Segment 242 are planned for CIPP lining.<sup>1</sup> Existing manholes would also undergo repairs or replacement where needed, as follows.

- On Segment 100: remove and replace SSMH 57-35 at west terminus of Segment
- On Segment 231: replace cones of SSMH 114-14 and SSMH 114-23 at termini of Segment
- On Segment 232: replace cone of SSMH 104-9 at south terminus of Segment
- On Segment 233: replace cone of SSMH 104-15 at south terminus of Segment
- On Segment 242: replace cones of SSMH 104-17 and SSMH 104-22 at termini of Segment

### Repair Methods

The following sections describe the activities involved each repair method. All work would be conducted in a manner consistent with the City’s Standard Specifications for Public Works Construction (available online at <http://santaclaraca.gov/our-city/departments-g-z/public-works/engineering/technical-documents>) and the environmental commitments described in *Avoidance & Minimization Measures* below.

#### Open Cut Replacement

Open cut replacement is also referred to as “cut and cover” replacement. In this method, any existing pavement is removed, and heavy equipment such as an excavator is used to open a trench to access the pipe segment being replaced. Once the trench is opened, the defective segment is cut out and removed and a layer of appropriate bedding material is laid. The new pipe segment is placed on the bedding material and connected to the remaining pipe segments, and the trench is backfilled. Within roadways, roadway paving and striping are then restored. For safety, and to reduce traffic disruption and other disturbance, trenching and pipeline replacement typically proceeds in sections about 100 feet long, with each section backfilled or covered with driveable trench plates at the end of the work day.

Table 2-1 gives an overview of equipment and contractor staffing used for typical open cut repairs. A small number of additional City staff and vehicles would intermittently be present for oversight and inspections.

**Table 2-1. Typical Equipment and Contractor Staffing for Open Cut Replacement**

Construction Phase	Equipment	Staffing
Excavation, pipe laying, trench backfill	2 crew trucks (1 F-150 and 1 F-450 or similar)	1 foreman
	1 – 2 excavators	1 equipment operator
	2 – 4 “10-wheelers” (10-cubic yard dump trucks)	3 – 7 laborers
	1 water truck	
	1 generator	
	1 air compressor	

<sup>1</sup> Because the repairs analyzed in this Initial Study are part of a larger program that includes other projects, Figures 3 – 6 also show additional repair projects that were found to qualify for exemption from CEQA review (see *Scope of this Initial Study* in Section 1) and are therefore not analyzed in this document. Repairs analyzed in this Initial Study are highlighted in green on Figures 3 – 6.

Construction Phase	Equipment	Staffing
Paving	1 loader and/or 1 skid-steer	
	1 street sweeper	
	2 walk-behind compactors	
	1 sawcutter	1 foreman
	1 or more concrete trucks	1 – 2 equipment operators
	1 “10-wheeler”	2 sawcut laborers
	1 oil barrel	2 – 4 additional laborers
	1 rolling compactor	
	1 water truck	

### CIPP Lining

CIPP lining is a repair method that essentially creates a new “pipe within a pipe” to repair a damaged or defective pipeline segment. No excavation is required. Instead, accessing the pipe via existing manholes, a resin-saturated felt liner is inserted into the interior of the pipe and extended through the defective segment using air or water pressure. The resin is then cured in place using steam, hot water, or UV light to form a structurally independent liner that can reliably convey flows.

Resin and curing method are selected based on the application and the work setting. In general applications such as the repairs analyzed in this Initial Study, styrene-based polyester resin or vinyl ester resin are the conventional approaches. Where these are not appropriate (for instance, where curing steam may migrate to streams or other water bodies), the styrene in the unsaturated polyester or vinyl ester resin can be replaced with a non-styrene alternative. Hot water curing is typically preferred over steam curing for CIPP lining of larger diameter pipes because of the difficulty and cost of maintaining adequate steam pressure in larger pipes.

Table 2-2 gives an overview of equipment and contractor staffing used for typical CIPP lining repairs. As identified above for open cut repairs, a small number of additional City staff and vehicles would intermittently be present for oversight and inspections.

**Table 2-2. Typical Equipment and Contractor Staffing for CIPP Lining**

Equipment	Staffing
1 crew truck (Ford 450 or similar)	1 foreman
1 cleaning/jetting/CCTV truck	1 boiler operator
1 boiler (resin) truck	3 – 4 additional workers
1 steam/equipment truck	
1 backhoe <sup>a</sup>	
1 Vac-Con dual engine truck-mounted combination sewer cleaning machine or similar	
2 sewage/trash pumps (Honda 4-inch 433 gallons per minute or similar)	
1 – 2 generators (Kohler 500 REOZT or similar)	

<sup>a</sup> Note that no excavation would take place; backhoe is for general use

## Manhole Repairs

Manhole repairs would include complete removal and replacement of SSMH 57-35 at the west terminus of Segment 100, and replacement of the manhole cones at SSMHs 114-14 and 114-23 (Segment 231), SSMH 104-9 (Segment 232), and SSMH 104-15 (Segment 233). Localized excavation would be required to access the components requiring replacement. Heavy equipment would be used to remove the defective components and install replacements. The excavation would then be backfilled, and roadway paving and striping would be replaced. Table 2-3 at the top of the next page provides an overview of typical equipment use and staffing for manhole repairs. Note that equipment and staffing are the same for manhole replacement and manhole cone replacement since the process is so similar.

**Table 2-3. Typical Equipment and Contractor Staffing for Manhole Repairs**

Equipment	Staffing
<b><u>Manhole Removal and Replacement</u></b>	3 – 5 persons
1 crew truck (Ford F450 or similar)	
1 walk-behind saw for pavement cutting	
1 backhoe	
1 loader	
1 Bobcat	
1 10-wheeler (10 cubic-yard dump truck)	
<b><u>Manhole Cone Replacement</u></b>	3 – 5 persons
1 crew truck (Ford F450 or similar)	
1 walk-behind saw for pavement cutting	
1 backhoe	
1 Bobcat	
1 “10-wheeler” (10 cubic-yard dump truck)	

## Contractor Staging

For repairs at each Segment, equipment and materials would be staged at a location selected by the contractor. To reduce the potential for disruption due to the presence of materials and equipment, the City’s Standard Specifications require the contractor to coordinate staging with the City, and prohibit storage of materials anywhere outside the designated staging area. The construction documents (bid package) for each Segment may include additional stipulations specific to conditions at the Segment.

## Repair Schedule & Work Hours

The proposed repairs are expected to take place between April 2023 and October 2023. Table 2-4 summarizes the anticipated time required to complete the proposed repairs at each Segment; note that this is a conservative estimate and repairs may actually proceed more quickly.

**Table 2-4. Anticipated Construction Schedule**

Proposed Repair	Construction Duration
Segment 100 open cut replacement, replacement of 1 manhole	10 days
Segments 231 – 233 CIPP, replacement of cones at 4 manholes	10 days total (all 3 Segments)
Segment 242 CIPP lining, replacement of cones at 2 manholes	4 days

City construction hours are typically 7:00 AM – 5:00 PM Monday through Friday, except for holidays. However, some night work may be necessary to avoid disrupting traffic flow since all of the repair Segments are at least partially within vehicle travel lanes, as Figures 3 – 6 show. The City requires all travel lanes to remain open during the peak commute hours (6:00 – 9:00 AM and 3:30 – 7:00 PM), after 3:00 PM on Fridays, and all day on Saturdays, Sundays, and City holidays. Individual lane closures are permitted between 9:00 AM and 3:30 PM Monday through Thursday and between 9:00 AM and 3:00 PM on Fridays, as long as two-way traffic is maintained. As a result, it may be possible to complete the work during regular City construction hours, but it may be more efficient and less disruptive overall to conduct at least some of the work between 7:00 PM and 7:00 AM.

## **Project Noticing & Signage**

### **Noticing**

The City's Standard Specifications require advance written notice to residents and businesses with street frontage or property affected by proposed construction. For the projects discussed in this Initial Study, which would not involve work in residential areas, the City will require 7-day and 48-hour advance notice to the following parties.

- All businesses on City blocks where work will be occurring
- Garbage, recycling, and tree trimming haulers serving the project areas

Contractor(s) will be required to coordinate their work so that it does not interfere with garbage and recycling pick-up days or school drop-off and pick-up schedules. The contractor(s) will also be required to provide the City's Police Department and Fire Department with 7-day and 48-hour advance notice for each of the projects.

Per the Standard Specifications, notices will be required to provide the following information.

- Nature and extent of proposed work
- Time and date work is planned to begin
- Anticipated completion date
- Contractor's name, address and telephone contact

### **Signage**

The City's Standard Specifications for Public Works Construction will require the contractor(s) carrying out the repair work to post large, easily visible signage identifying the project at each active work site. Information on the sign will include the name of the project, anticipated dates of work, and the relevant City and contractor contacts.

## **Avoidance & Minimization Measures**

To reduce the potential for environmental impacts, the City will require the contractor(s) to implement a number of measures during repair work, summarized below. These Avoidance and Minimization Measures will be incorporated into the project construction document packages so they become contractually binding on the contractor(s) selected to carry out the proposed repairs.

## Dust Control

To reduce dust generation, the following measures will be required during excavation and ground disturbance. These measures reflect the requirements of the Bay Area Air Quality Management District's (BAAQMD's) Best Management Practices (BMPs) for fugitive dust control (Bay Area Air Quality Management District 2017).

- All exposed surfaces (potentially including contractor parking areas, staging areas, areas subject to excavation or other ground disturbance, and unpaved access roads/routes) and soil stockpiles will be watered 2 times per day
- All haul trucks transporting soil, sand, or other loose material offsite will be covered
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. Use of dry power sweeping will be prohibited
- All vehicle speeds in unpaved areas will be limited to 15 miles per hour
- If pavement is removed, it will be replaced as soon as possible.
- Vegetated areas disturbed during construction will be replanted/reseeded as soon as possible
- Project signage will include the name and telephone number of City staff to contact regarding dust complaints. City staff will respond and take corrective action within 48 hours. Project signage will also include the BAAQMD's phone number to ensure compliance with applicable regulations

## Emissions Control

- Idling times will be minimized, either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes. Clear notification will be provided to all equipment operators regarding limitation on idling times
- All construction equipment will be maintained and properly tuned in accordance with manufacturer specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation

## Operations & Maintenance after Repair Completion

The proposed repairs at Segments 100, 231 – 233, and 242 are intended to repair major sewer defects and restore these Segments to full and reliable function. Normal operations would resume at all Segments following repair work. Maintenance of the repaired Segments is not expected to be needed in the immediately foreseeable future; the lifespan of the CIPP lining is predicted to be on the order of 50 years and may be longer (e.g., Sterling et al. 2016), and that of a replaced sewer pipe Segment can exceed 100 years (e.g., JM Eagle 2013, Utah State University Buried Structures Laboratory 2014), absent earthquakes or other catastrophic events. The replaced manhole and manhole cones can also be expected to have a useful service life of multiple decades.

## References Cited in this Section

Bay Area Air Quality Management District. 2017. California Environmental Quality Act Air Quality Guidelines. (May.) Available: [http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en). Downloaded: December 2017.

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Sterling, R., Alam, S., Allouche, E., Condit, W., Matthews, J., and Downey, D. 2016. Studying the Life-Cycle Performance of Gravity Sewer Rehabilitation Liners in North America. *Procedia Engineering* 165: 251–258. Available: <https://www.sciencedirect.com/science/article/pii/S1877705816341583>. Downloaded: March 2022.

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## Environmental Impacts

### Introduction

This section analyzes the proposed projects' anticipated environmental impacts and describes the measures the City will implement to avoid or reduce impacts identified as potentially Significant.

On the next page is an overview of *Environmental Factors Potentially Affected*. This is followed by a series of checklist matrices itemizing the proposed project's environmental impacts by resource topic. The checklist matrices are based on the sample initial study checklist provided in Appendix G of the state's *CEQA Guidelines* and incorporate changes to the *CEQA Guidelines* adopted in December 2018. Text after each matrix discusses the findings presented in the matrix.

The following terminology is used to assess the severity of the proposed projects' impacts.

- **Potentially Significant Impact** – It is reasonably foreseeable (that is, substantial evidence suggests) that the proposed project would alter conditions from the existing pre-project baseline condition, and the change would be substantial or important enough to exceed a threshold of significance representing the level at which an impact becomes a concern
- **Less than Significant with Mitigation Incorporated** – The proposed project's impact would be Significant, but mitigation measures will be adopted to lessen the effect, reducing it below the threshold of significance, and therefore below the level of concern. Where this finding is made, the specific mitigation measures are identified, including the timing of implementation, the entity or entities responsible for implementation and any required follow-up activities, and applicable performance standards
- **Less than Significant Impact** – It is reasonably foreseeable that the proposed project would alter conditions from the pre-project baseline condition, but the change would be small enough to fall below the threshold of significance
- **No Impact** – The proposed project would not materially change conditions from the existing pre-project baseline condition
- **Beneficial Impact or Benefit**– The proposed project would improve conditions by comparison with the pre-project baseline

Analysis presented in this section was conducted consistent with the requirements of CEQA, the state's *CEQA Guidelines*, and prevailing standards of practice for each resource topic. Analysis and findings represent the City's independent judgment as lead agency under CEQA.

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:**

The environmental factors checked below would be potentially affected by at least one of the proposed projects, involving at least one impact that is a “Potentially Significant Impact” as indicated by the checklist on the following pages.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                      | <input type="checkbox"/> Agriculture & Forestry Resources | <input checked="" type="checkbox"/> Air Quality                   |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources    | <input type="checkbox"/> Energy                                   |
| <input checked="" type="checkbox"/> Geology & Soils      | <input type="checkbox"/> Greenhouse Gas Emissions         | <input checked="" type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology & Water Quality       | <input type="checkbox"/> Land Use & Planning              | <input type="checkbox"/> Mineral Resources                        |
| <input type="checkbox"/> Noise                           | <input type="checkbox"/> Population & Housing             | <input type="checkbox"/> Public Services                          |
| <input type="checkbox"/> Recreation                      | <input type="checkbox"/> Transportation                   | <input type="checkbox"/> Tribal Cultural Resources                |
| <input type="checkbox"/> Utilities & Service Systems     | <input type="checkbox"/> Wildfire                         | <input type="checkbox"/> Mandatory Findings of Significance       |

**DETERMINATION:**

On the basis of 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 project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in 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 “potentially significant unless mitigated” 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. An 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 potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

*Vincent Luchessi*

Vincent Luchessi, PE  
Senior Civil Engineer

12/8/2022

Date

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## Environmental Checklist

<b>I. AESTHETICS</b>  <i>Except as provided in Public Resources Code Section 21099<sup>a</sup>, would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views <sup>b</sup> of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning or other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (construction)	<input checked="" type="checkbox"/> (long term)

<sup>a</sup> Under Public Resources Code Section 21099 (Section 21099 of the CEQA statute), the aesthetic impacts of certain projects in transit priority areas are not considered significant impacts on the environment.

<sup>b</sup> *Public views* refers to views that are experienced from a publicly accessible vantage point.

## Discussion of Checklist Responses

### Potential for Adverse Effects on a Scenic Vista

All of the repair Segments are in located developed and urbanized areas. The area around Segment 100 is designated and zoned for heavy industrial use. Portions of Segments 231 – 233 and 242 are adjacent to areas designated Parks / Open Space, where aesthetics are a higher priority. These Segments are also in close proximity to open space surrounding the Eastside Retention Basin and at the PAL BMX track, which represent a visual amenity for area commuters and residents. However, there are no formally designated scenic vistas in the immediate vicinity of these Segments or anywhere else within City limits. Moreover, the projects focus on repairs to existing sanitary sewer infrastructure. Once construction is complete, the only visible project elements would continue to be the covers of existing at-grade sewer manholes, and manhole appearance would not change materially. As a result, the proposed repairs would have No Impact on scenic vistas, and no mitigation is required.

### Potential for Damage to Scenic Resources

The State of California designates and protects certain state highways under the Scenic Highway Program, overseen by Caltrans. The County of Santa Clara also designates and protects scenic roads—including freeways, expressways, arterial streets, and rural routes—under its General Plan (County of Santa Clara 1994).

There are no state-designated scenic highways or County-designated scenic roads within the City or in proximity to any of the proposed projects (California Department of Transportation 2019, County of Santa Clara 2008). There would be No Impact on resources associated with designated scenic routes, and no mitigation is required.

As discussed in the previous item, there are also no scenic vistas in the vicinity of any of the proposed repair Segments. Moreover, work at all Segments would focus on repairs to existing sanitary sewer infrastructure that is largely in the subsurface; the only visible project elements would be rehabilitated manholes, which would not change materially in appearance. None of the projects would have the potential to damage scenic resources. There would be thus No Impact with regard to scenic resources in general, and no mitigation is required.

### Potential to Conflict with Zoning or Other Scenic Quality Regulations

The City regulates aesthetic values through the General Plan (City of Santa Clara 2014), various Specific Plans, and City Code, including but not limited to Title 18 (*Zoning*), all of which provide for installation and maintenance of adequate infrastructure to support existing and planned development. The proposed projects would entail repairs to existing sewer facilities already in service; there would be no new installations. During construction, there would be some visual disruption associated with the presence of large equipment, construction safety barriers, and materials, but this would be temporary and short-term. None of the projects would result in a material change in site aesthetics over the long term. Consequently, the proposed projects are considered entirely consistent with applicable regulations governing aesthetic values. There would be No Impact related to conflict with zoning or other scenic quality regulations, and no mitigation is required.

### Potential to Create New Sources of Light or Glare

During construction, there would be some potential for new or increased glare, primarily associated with reflections from the glass and painted metal surfaces of construction equipment. In addition, if night work is necessary—as it may be in some locations, to comply with City requirements for travel lane availability and avoid traffic disruption on busy roadways—there would be potential for glare and light spill from work lighting. However, construction at each of the Segments would be short-term and would be visible to a comparatively small number of viewers. Because of the short duration and limited visibility of construction-related glare and light spill, potential construction-period impacts related to new sources of light and glare are considered Less than Significant. No mitigation is required.

The proposed repairs would decrease the need for future maintenance along the project Segments; consequently, this type of short-term, localized increase in glare and light spill would be restricted to the very short duration of the construction work period at each of the project Segments.

Once construction is complete, the only visible elements of the projects would be the replaced or rehabilitated manhole covers. However, even where covers and/or frame elements are replaced, their appearance would not change substantially, and they would not represent a source of new or increased glare. Over the long term, there would be No Impact with regard to sources of new or increased light or glare. No mitigation is required.

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<b>II. AGRICULTURE &amp; FORESTRY RESOURCES</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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])?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Checklist Responses

### Potential for Conversion of Farmland to Non-Agricultural Use

The Land Resource Protection Division (LRPD) of the state's Department of Conservation is charged with protecting California agricultural lands as well as open space resources. To that end, the LRPD's Farmland Mapping and Monitoring Program (FMMP) evaluates and rates agricultural lands based on factors such as soil quality and irrigation status. The highest-quality lands are designated Prime Farmland. Other important agricultural lands are designated Farmland of Statewide Importance (similar to Prime Farmland but with minor shortcomings) or Unique Farmland (farmland that has lower quality soils but is important for production of the state's leading agricultural crops). Additional designations include Farmland of Local Importance (lands used for production of crops important to the local agricultural economy) and Grazing Land. Collectively, these agricultural lands warranting protection are often referred to as Farmland. Every 2 years, the FMMP produces updated GIS-based maps showing the location and extent of California's Farmland (California Department of Conservation 2017a, 2017b).

There is no state-designated Farmland within or adjacent to the project footprints or within the larger extent of the City (California Department of Conservation 2016a). Moreover, the proposed projects would repair existing, previously installed sanitary sewer facilities. The proposed projects would therefore have no potential to result in the direct conversion of Farmland for non-agricultural use.

The projects are needed to maintain adequate sanitary sewer service for existing development. The repaired facilities may also serve future development, but any such development would take place under the aegis of adopted City land use planning documents; the repair projects themselves would not alter existing land use designations or zoning nor would they alter existing or planned levels of development. As a result, the proposed repair projects would have no potential to create pressures indirectly fostering conversion of Farmlands elsewhere in the City or County.

There would be No Impact related to conversion of Farmland to non-agricultural use, and no mitigation is required.

### Potential to Conflict with Existing Agricultural Zoning or Williamson Act Contract

Under the California Land Conservation Act of 1965 (Williamson Act), local governments may establish contracts with local landowners to restrict specific parcels to agricultural or open space use (see California Department of Conservation 2017c). No such contracts are in place within City limits (County of Santa Clara 2022).

As itemized in Section 2, the project Segments are under several different types of zoning:

- Segment 100: MH (Heavy Industrial)
- Segment 231: PD-MC (Planned Development – Master Community), B (Public or Quasi Public), PD (Planned Development)
- Segment 232: PD-MC (Planned Development – Master Community), B (Public or Quasi Public), PD (Planned Development)
- Segments 233 and 242: PD-MC (Planned Development – Master Community), B (Public or Quasi Public)

There is no agricultural zoning in the immediate vicinity of Segments 100, 231 – 233, or 242. An area zoned A (PD) Agricultural & Planned Development is present on the east side of the Guadalupe River just south of SR 237, about 0.4 mile east of the Segments in Lafayette Street (City of Santa Clara *n.d.*). However, this area is already built out with high-density residential uses and—based on review of GoogleEarth historic aerial photographs—has not been cultivated in recent decades. Repairs to existing utilities in the area are therefore considered to have no potential to result in further development there, especially as the repairs would not increase sewer capacity.

There would be No Impact related to conflict with agricultural zoning or Williamson Act contracts, and no mitigation is required.

### Potential to Conflict with Existing Forest or Timberland Zoning

Section 12220[g] of the California Public Resources Code defines *forest land* as land that can support 10% native tree cover 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.” Public Resources Code Section 4526 defines *timberland* as non–federally owned land that is available for, and capable of, growing commercial tree crops used to produce lumber and other forest products. There are no lands of either type within or immediately any of the project Segments or elsewhere in the City.

Under Section 51104 of the California Government Code, a timberland production zone is an area that is “devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses” and is under zoning established through a specific process stipulated by law. There are no lands of either type within or immediately any of the project Segments or elsewhere in the City.

With no forest or timberland zoning in vicinity of any of the project Segments, there is no potential to conflict with such zoning. There would be No Impact related to conflict with forest or timberland zoning, and no mitigation is required.

### Potential to Result in Loss or Conversion of Forest Land

There is no forest land in proximity to any of the project Segments or within the larger extent of the City. The proposed projects would therefore have no potential to result in the direct loss or conversion of forest land. Similarly, although the repaired facilities may also serve future development, any such development would take place under adopted City land use planning documents; the repair projects would have no potential to alter land use designations or zoning or to modify planned levels of development. Moreover, they would not increase sewer capacity and thus would not provide additional utility capability that could foster more extensive development. As a result, the proposed repair projects would have no potential to create indirect pressures contributing to loss or conversion of forest lands elsewhere in County.

There would be No Impact related to loss of forest land or conversion of forest land to non-forest use, and no mitigation is required.

### Potential for Other Changes

As discussed in the previous items, the proposed projects would repair existing sewer facilities that currently serve existing development, and may also serve future development under approved land use plans. As such, they are consistent with the City’s land use planning and with surrounding land uses; they would have no potential to independently modify land uses in the project areas. Moreover, as discussed in the sections above, there is no Farmland or forest land in the project vicinity or the larger City. The projects therefore have no

potential to directly result in or indirectly contribute to conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. There would be No Impact related to such conversion, and no mitigation is required.

### References Cited in this Section

California Department of Conservation. 2016a. California Important Farmland Finder. Available: <https://maps.conservation.ca.gov/DLRP/CIFF/>. Accessed: March 2022.

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<b>III. AIR QUALITY</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<i>Would the project:</i>				
(a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (construction)	<input checked="" type="checkbox"/> (long term) (potential long-term Benefit)
(c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number people?	<input type="checkbox"/>	<input checked="" type="checkbox"/> (construction)	<input type="checkbox"/>	<input checked="" type="checkbox"/> (long term) (potential long-term Benefit)

## Discussion of Checklist Responses

### Background

Air quality is protected under the federal and California Clean Air Acts and is regulated at the federal, state, and regional levels. Under the federal Clean Air Act, the U.S. Environmental Protection Agency (EPA) has oversight authority and is responsible for establishing nationwide air quality standards but delegates the frontline responsibility for maintaining air quality to the state level. In California, the state agency responsible for air quality is the California Air Resources Board (CARB), an arm of the California Environmental Protection Agency (CalEPA). CARB has elected to retain primary responsibility for the regulation of mobile (vehicular) emission sources, but in turn delegates substantial implementation authority to the 35 regional air districts, which are responsible for enforcing standards and regulating stationary (non-vehicular) emissions sources in each of California’s 15 air basins. The boundaries of the air basins are defined based on geographic, meteorological, and political criteria (California Air Resources Board 2012, 2018). The City is located within the San Francisco Bay Area Air Basin, under the jurisdiction of the BAAQMD, the nation’s oldest regional air district.

EPA and CARB regulate pollutants that are of particular concern because of their potential to impact human health and the environment, and their precursors, through the establishment of ambient air quality standards that reflect acceptable airborne concentrations of these substances. These are referred to as the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) respectively. The regulated pollutants and precursors, referred to as *criteria pollutants*, are:

- carbon monoxide (CO)
- airborne lead (Pb)
- nitrogen dioxide (NO<sub>2</sub>)
- ozone (O<sub>3</sub>)<sup>1</sup>
- inhalable particulate matter (PM), including material less than 10 microns (0.01 millimeter) in diameter (PM<sub>10</sub>) and material less than 2.5 microns (0.0025 millimeter) in diameter (PM<sub>2.5</sub> or fine PM).<sup>2</sup> PM<sub>2.5</sub> is of special concern from a health perspective because it is small enough to be drawn deep into the lungs when inhaled
- sulfur dioxide (SO<sub>2</sub>)

Table 3-1 shows the federal and state standards for criteria pollutant levels. Areas that fail to achieve these standards are designated as *nonattainment areas*.

**Table 3-1. Federal and State Ambient Air Quality Standards**

Pollutant	Averaging Time	NAAQS	CAAQS
CO	1-hour	35 ppm	20 ppm
<i>Not to be exceeded more than once per year</i>			

<sup>1</sup> Ozone in the lower atmosphere that we breathe (troposphere)—as opposed to ozone in the stratosphere—is formed primarily from atmospheric chemical reactions involving emissions of reactive organic gases (ROGs) and oxides of nitrogen (NO<sub>x</sub>). As a result, air quality plans for ozone and significance thresholds address emissions of these precursor pollutants.

<sup>2</sup> Sources of PM<sub>10</sub> include road dust and earthmoving activities. PM<sub>2.5</sub> includes most of the particles generated by combustion of liquid and gaseous fuels as well as particulates from smoking and vaping and particles generated by atmospheric reactions between gases, including ROG and NO<sub>x</sub>.

Pollutant	Averaging Time	NAAQS	CAAQS
	8-hour	9 ppm <i>Not to be exceeded more than once per year</i>	9 ppm
Airborne Pb	3-month rolling average	0.15 µg/m <sup>3</sup>	—
NO <sub>2</sub>	Annual	0.053 ppm	0.030 ppm
	1-hour	100 ppb (3-year average of 98 <sup>th</sup> percentile)	0.18 ppm
O <sub>3</sub>	1-hour	—	0.09 ppm
	8-hour	0.070 ppm (3-year average of 4 <sup>th</sup> highest value )	0.070 ppm
PM10	24-hour	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
	Annual	—	20 µg/m <sup>3</sup>
PM2.5	24-hour	35 µg/m <sup>3</sup> (3-year average of 98 <sup>th</sup> percentile)	—
	Annual	12 µg/m <sup>3</sup> (3-year average)	12 µg/m <sup>3</sup> (3-year maximum)
SO <sub>2</sub>	1-hour	75 ppb (3-year average of 99 <sup>th</sup> percentile)	0.25 ppm
	24-hour	0.14 ppm <i>Not to be exceeded more than once per year</i>	0.04 ppm

**Abbreviations:**

ppb = parts per billion by volume  
ppm = parts per million by volume  
µg/m<sup>3</sup> = micrograms per cubic meter

Source: Bay Area Air Quality Management District 2017a

The BAAQMD views regional air pollution as a cumulative impact—that is, the result of multiple sources and projects over time—and has concluded that no single project is sufficient in size to result independently in a new violation of air quality standards (see discussion in Bay Area Air Quality Management District 2017a, page 2-1). This is particularly true of small, comparatively short-duration undertakings like the proposed repairs.

Table 3-2 shows the BAAQMD’s adopted thresholds of significance for construction emissions of criteria pollutants. These thresholds are not mandatory, but they have been widely used by Bay Area cities and counties as the best available guidance in evaluating the magnitude of project construction emissions and assessing the level at which emissions become “considerable” in the context of a cumulative impact on air quality.

**Table 3-2. BAAQMD Thresholds for Construction-Related Criteria Pollutant Emissions**

Pollutant	Average Daily Emissions
Reactive organic gases (ROG)	54 pounds/day
Oxides of nitrogen (NO <sub>x</sub> , including NO <sub>2</sub> )	54 pounds/day
PM10 (exhaust emissions)	82 pounds/day*
PM2.5 (exhaust emissions)	54 pounds/day*

Pollutant	Average Daily Emissions
PM10 and PM2.5 (fugitive dust)	Emissions are considered Less than Significant if project implements BAAQMD’s recommended best management practices (BMPs) for dust control
Carbon monoxide (CO)	No threshold identified

\* Federal air permitting rules for major stationary sources of air pollution (40 CFR 51 – 52) define a *significant* emissions increase from those sources as 10 tons per year for ozone precursors and PM2.5 and 15 tons per year for PM10. Dividing those figures by 365 days per year results in 54 pounds per day and 82 pounds per day.

Source: Bay Area Air Quality Management District 2017a

In addition to the criteria pollutants, there are air pollutants that are classified as toxic or hazardous—nearly all of which are also classified as ROG or PM—because of their carcinogenicity or other health impacts. These are often addressed on a more localized basis. Carcinogenicity is assessed in terms of the lifetime risk of developing cancer as a result of exposure.

### Potential to Conflict with or Obstruct Air Quality Plan Implementation

As noted above, the project is within the jurisdiction of the BAAQMD and the primary air quality plans are those that have been developed to assure attainment of regional ambient air quality standards. The State Implementation Plan (SIP) identifies the regulations that BAAQMD has already promulgated to attain (or maintain attainment with) NAAQS, and BAAQMD’s *Spare the Air: Cool the Climate* plan (Bay Area Air Quality Management District 2017b) satisfies state requirements with regard to CAAQS and includes a list of planned regulatory activities and nonregulatory activities, including but not limited to funding initiatives. As small, localized repairs with short-term construction periods there is nothing about the project projects that would conflict with or obstruct implementation of these regional-scale long-term plans. There would be No Impact related to conflict with or obstruction of an applicable air quality plan, and no mitigation is required.

### Potential for Cumulatively Considerable Increase in Nonattainment Criteria Pollutant(s)

The principal metrics for regional air quality are the concentrations of criteria pollutants for which ambient air quality standards exist, and the extent to which the region attains those standards. The Bay Area Air Basin—which includes the Counties of Santa Clara, San Mateo, San Francisco, Alameda, Contra Costa, Marin, Napa, and parts of Solano and Sonoma—is only in “nonattainment” for ozone and particulate matter (Table 3-3).

**Table 3-3. Attainment Status for Criteria Air Pollutants, San Francisco Bay Area Air Basin**

Pollutant	NAAQS	CAAQS
Ozone	Nonattainment (Marginal)	Nonattainment
PM10	Unclassifiable/Attainment	Nonattainment
PM 2.5	Nonattainment (Moderate)*	Nonattainment
CO	Unclassifiable/Attainment**	Attainment
NO <sub>2</sub>	Unclassifiable/Attainment	Attainment
SO <sub>2</sub>	Unclassifiable/Attainment	Attainment
Airborne Pb	Unclassifiable/Attainment	Attainment

\* With respect to 24-hour standard (Unclassifiable/Attainment for annual standard).

\*\* Urban areas classified as attainment, other areas classified as Unclassifiable/Attainment.

**Note:**

CAAQS are also established for certain non-criteria pollutants (hydrogen sulfide, sulfates, visibility reducing particles, and vinyl chloride), but the only portion of the state still in Nonattainment for any of these non-criteria CAAQS is the Searles Valley portion of the Mojave Desert.

Source: California Air Resources Board 2022

Ambient ozone concentrations are predominantly the result of atmospheric reactions between ozone precursors—i.e., ROG and NO<sub>x</sub>. BAAQMD CEQA significance thresholds for these precursors and PM are shown in Table 3-4 alongside projected emissions from repair work. Emissions modeling is presented in detail in Appendix A. Note that Table 3-4 shows emissions for cut-and-fill repairs, which would entail more heavy equipment usage and more extensive excavation than localized manhole/manhole cone replacement or CIPP lining and thus represents a worst-case daily emissions scenario for tailpipe emissions associated with the proposed projects.

**Table 3-4. Maximum Daily Emissions Associated with Cut-and-Fill Repairs**

Pollutant	BAAQMD Threshold (pounds/day)	Projected Emissions (pounds/day)
Reactive organic gases (ROG)	54	3.8
Oxides of nitrogen (NO <sub>x</sub> , including NO <sub>2</sub> )	54	32.9
PM10 (exhaust emissions)	82	1.3
PM2.5 (exhaust emissions)	54	<1.3
PM10 and PM2.5 (fugitive dust)	Less than Significant if BAAQMD dust control Best Management Practices (BMPs) implemented	Project would incorporate BAAQMD dust control measures where ground disturbance or excavation is required

Sources: Bay Area Air Quality Management District 2017a, Tamura Environmental 2022 (Appendix A to this Initial Study)

As shown in Table 3-4, worst-case daily emissions of ROG, NO<sub>x</sub>, and PM10 and PM2.5 from vehicle and equipment exhaust would be substantially below the BAAQMD’s daily emissions thresholds (the level at which emissions are identified as Cumulatively Considerable). Emissions levels would be low enough (see Appendix A as well as Table 3-4 above) that even if CIPP lining and cut-and-fill repairs were to overlap, total emissions would still be below the BAAQMD’s daily emissions thresholds. Additionally, as noted in Section 2 (see *Avoidance and Minimization Measures*), the projects would incorporate AMMs for dust and emissions control reflecting the requirements of the BAAQMD’s dust control BMPs. With these measures in place, fugitive dust emissions would be controlled to a level the BAAQMD considers Less than Significant, and are also evaluated as Less than Cumulatively Considerable. Impacts with regard to a cumulatively considerable increase in any nonattainment criteria pollutant during construction are evaluated as Less than Significant overall, and no mitigation is required.

Once the repairs are complete, the projects would decrease the need for future repairs and as such should, if anything, decrease emissions associated with City sewer system O&M. There would thus be No Impact with respect to a cumulatively considerable increase in any nonattainment criteria pollutant over the long term, and a long-term Benefit is likely. No mitigation is required.

### Potential to Expose Sensitive Receptors to Pollutants<sup>3</sup>

#### Background & Approach

CIPP lining was introduced in 1971 as an alternative to digging up and replacing sewers, and since then hundreds of millions of feet of renewed CIPP pipe have been installed around the world; currently, CIPP is one of the most widely used methods of trenchless pipeline renewal for both structural and nonstructural purposes (Najafi et al. 2018). In recent years, however, CIPP has come under scrutiny as a source of potential toxic

<sup>3</sup> The BAAQMD defines *sensitive receptors* as “facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses,” such as schools, hospitals, and residential areas, and identifies the (potential) area of influence as being within 1,000 feet of the project boundary (Bay Area Air Quality Management District 2017a).

exposure, with particular focus on vapors associated with styrene resins (e.g., California Department of Public Health 2020). NASSCO has had a styrene task force in place since 2008 and has regularly published and updated guidelines to improve the safety of styrene resin use in CIPP lining (see National Association of Sewer Service Companies 2020).

Two primary styrene vapor exposure routes have been identified: (1) exposure to compounds that are released aboveground from CIPP vents during steam curing, and (2) exposure due to subsurface migration into buildings, including but not limited to leakage from sewer laterals into subsurface cracks and drains (e.g., Teimouri Sendesi et al. 2020). This analysis considers both exposure routes.

Styrene vapor qualifies as an ROG, and styrene vapor emissions are therefore subject to the BAAQMD significance threshold of 54 pounds/day for ROGs. The BAAQMD also considers styrene vapor a toxic air contaminant (TAC) capable of resulting in both acute and chronic effects.<sup>4</sup> In this context, BAAQMD Regulation 2-5 sets a screening level for styrene vapor emissions: 9.3 pounds/hour (or, multiplied by 24 hours/day, 223.2 pounds/day). If emissions are projected to be above that level, a quantitative health risk assessment could be warranted. (Note that the styrene vapor screening threshold is less stringent than the applicable BAAQMD significance threshold for ROGs.)

Typically, assessment of impacts related to TAC emissions would include dispersion modeling (i.e., modeling that projects TAC levels at increasing distances from the emissions source, in consideration of local surface conditions and meteorology), but this is not considered to be meaningful for the proposed projects, because results of recent studies are conflicting and inconclusive regarding vapor generation rates during CIPP lining. In particular,

- (1) as Appendix A discusses in more detail, the results of various studies of vapor generation rates differ by more than an order of magnitude (e.g., Teimouri Sendesi et al. 2017, 2020, and Noh et al. 2022 vs. Mathews et al. 2020), and
- (2) there are substantive questions about how well the results of experiments on 100-gram samples under laboratory conditions can be extrapolated to real-world field conditions

In this context, reliable inputs for dispersion modeling are lacking.

Similarly, none of the recent studies appear to provide a definitive methodology to calculate the rate of vapor generation and enable comparison of projected emissions to BAAQMD thresholds. As discussed in more detail in Appendix A, if the *lowest* results from studies at Purdue University are assumed to be applicable to real-world CIPP, the calculated emissions exceed BAAQMD significance thresholds for ROG. If the *highest* rate from a study conducted for NASSCO (Mathews et al. 2020) is used, emissions would be well below that same BAAQMD significance threshold.<sup>5</sup>

In this context, quantitative analysis of vapor emissions was considered speculative at the current level of understanding (see Appendix A). The following paragraphs accordingly assume at least some potential for generation of styrene vapors during CIPP lining (assuming styrene resins are used), since this is one area

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<sup>4</sup> Note that although styrene vapors are toxic, they are not considered carcinogenic; e.g., BAAQMD Regulation 2-5, Table 2-5-1, does not identify any cancer potency.

<sup>5</sup> Note also that if non-styrene resins are assumed and the lower Purdue emissions rate is used, the modeled vapor emissions estimate is well below the BAAQMD significance threshold (Tamura Environmental 2022; see Appendix A).

where the studies are in agreement, and qualitatively discuss the potential for direct aerial exposure and potential for exposure via subsurface migration into buildings.

### Potential for Direct Aerial Exposure

For direct aerial exposure, the distance from CIPP steam vents to potential receptors is an important factor. While the key Purdue University study (Teimouri Sendesi et al. 2020) does not provide comprehensive information regarding receptor distances in the exposure incidents it evaluates, the descriptions for some of the reported incidents indicate that work was occurring in the vicinity of residential neighborhoods or schools, and some of the incidents involved workers, with measurements taken just 20 feet from vents.<sup>6</sup> A recent NASSCO study of this exposure route recommended a distance of 15 feet from “exhaust manholes and emission stacks” (i.e., sources of vapor emissions) as a conservative setback during curing (Matthews et al. 2020).

No schools, hospitals, residential areas, or other similar facilities that qualify as sensitive receptors are within 1,000 feet of the work areas where CIPP lining is planned. Segments 231 – 233 and 242 are all at substantial distances from areas where people would congregate at neighboring land uses: about 290 feet at closest approach to buildings at the office/R&D park on the west and about 330 feet at closest approach to the PAL BMX Track on the east (see Figure 2).<sup>7</sup> At this distance, direct aerial exposure is not expected to be a problem for members of the general public at neighboring facilities.

Within Lafayette Street itself, the travel lane(s) where work is occurring would be closed, although the curing process may take up to 24 hours in these large-diameter sewer lines and it will likely be infeasible to close Lafayette Street entirely for the duration of work, since it is a major arterial roadway serving heavy commute traffic. As a result, motorists would likely continue to use the other lanes, and thus could approach fairly close to the work area. However, current best practices for use of styrene resins in CIPP lining (see National Association of Sewer Service Companies 2020) include ensuring that if steam curing is used, the vent stack is a minimum of 6 feet above-grade (i.e., above head level and above vehicle windows and vent intakes); this increases dispersion and reduces the potential for exposure. Moreover, both vehicle and pedestrian traffic would be moving past the work area, so exposure times would be very limited. Both of these factors would help to reduce direct aerial exposure to styrene vapors for traffic along Lafayette Street.

### Potential for Subsurface Migration into Buildings

The second exposure route addressed in recent studies involves subsurface migration into buildings (e.g., Wisconsin Department of Health and Family Services 2005, Bauer 2012, Landstra 2017, Teimouri Sendesi et al. 2017, Ra et al. 2019, Teimouri Sendesi et al. 2020). A California Department of Public Health (2020) Safety Alert provides an example involving migration of vapors into an office building during CIPP lining of a large-diameter sewer line and notes that styrene levels were measurable in the building as much as 3 months following the completion of work. This appears to reference a CIPP project discussed in a Wisconsin Department of Health and Family Services (2005) report, which tentatively attributed the prevalence and duration of odors to the location of the sewer directly beneath the building, the brick construction of the sewer line, and its 60-inch diameter. Another more recent study (Noh et al. 2022) discusses more than 130 contamination incidents at various residential and commercial buildings. A number of these were identified as involving older buildings and/or brick-lined sewers (Noh et al. 2022). Sewer laterals have also been cited as a

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<sup>6</sup> Additionally, it is unclear whether all of the incidents listed in this study were due to direct aerial exposure; however, those involving workers at a short distance from the steam vent are presumed to have been.

<sup>7</sup> Note that the former Santa Clara Golf & Tennis Club has closed, and its course—which borders Lafayette Street to the west at the south end of Segment 233 and both sides of Lafayette Street for the entirety of Segment 242 (see Figure 2)—is no longer in use.

route for migration of vapors into buildings (California Department of Public Health 2020); with regard to the question of why the required J-traps that control normal sewer odors were not controlling CIPP vapors, Wisconsin Department of Health and Family Services (2005) determined that a primary source of intrusion was basement cracks, and Noh et al. (2022) examined the possibility that CIPP pressurization might render J-traps less effective.

Several factors reduce the potential for CIPP lining at Segments 231 – 233 and 242 to result in subsurface vapor migration to neighboring buildings.

- As noted above, all of the Segments planned for CIPP are located at a substantial distance (minimum of ~300 feet) from nearby buildings and other gathering places, unlike the situation in the Wisconsin Department of Health and Family Services (2005) study
- All of the repairs involve large-diameter mains that do not have laterals, eliminating an additional potential migration pathway
- Although large-diameter (42 inches), none of the sewer lines planned for repair is of the older brick-lined type, which is not used in the City, and neighboring buildings are also newer construction

### Conclusions

As itemized above, multiple factors would reduce the potential for exposure to styrene vapors via direct aerial exposure and by subsurface migration into buildings. Nonetheless, in consideration of the potential for human health effects, there is reason to be cautious. To address this, the City will adopt the following mitigation measure. With this measure in place, health effects should be avoided and additional information will be collected that can help to guide planning for future repairs and should contribute to better understanding of the potential effects of CIPP vapor emissions. Impacts are accordingly considered Less than Significant, and no additional mitigation is required.

#### **Mitigation Measure AIR-1. Toxic Air Contaminant and Odor Control**

If feasible, the City will avoid the use of styrene resins for CIPP lining.

If the use of styrene resins cannot feasibly be avoided, the City will require the following measures to reduce the potential for exposure to toxic air contaminants during CIPP lining.

- All use of styrene resins will be required to adhere to the standard best practices in NASSCO's *Guideline for the Safe Use and Handling of Styrene-Based Resins in Cured-in-Place Pipe* (National Association of Sewer Service Companies 2020 or most current)
- Sewer main reaches to be rehabilitated via CIPP will be plugged at both ends prior to lining, and a vent will be provided at each end of the reach to provide better dispersal of vapors
- If steam curing is used, the steam exhaust will be located at least 250 feet from commercial/business park entry areas and all heating, ventilation, and air conditioning system air intakes. If this is not feasible, an alternative curing method will be used
- Adjacent facilities will be notified in writing at least 1 week prior to the start of work. Notification will include the following information
  - Anticipated work dates
  - An overview of the repair process, including the substances proposed for use

- Instructions to leave the premises, move farther away from the work area if possible, and contact the Santa Clara Fire Department if vapors or odors have entered the building, along with the appropriate Fire Department contact information
- An advisory to seek medical attention promptly if exposure is suspected
- A request to report any odor or health concerns to the City
- The name, phone number, and email address of the City staff member who will be responsible for answering questions and receiving and responding to reports of odors or health concerns

Additionally, to enable further assessment of potential concerns, the City will document any calls received regarding odors or health symptoms, and if health symptoms are reported will conduct indoor air monitoring following a standard protocol appropriate to the type of resin and curing method(s) being used. Results of monitoring will be documented in City files for consideration in planning future projects. If monitoring indicates levels of any CIPP-related emissions of any toxic air contaminant above applicable health thresholds, the City will take appropriate action to reduce the potential for exposure.

### Potential for Other Emissions

The BAAQMD's CEQA guidelines (Bay Area Air Quality Management District 2017a) identify examples of land uses that have the potential to generate considerable odors, such as wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. Construction can also generate odors many people find objectionable, from sources such as diesel exhaust and paving media. As noted above, depending on the type of resin and the curing method used, CIPP lining can also generate objectionable odors over short durations close to where the lining is being applied; this is discussed further in Appendix A.

However, although there is a potential for CIPP lining to generate nuisance odors, the large setbacks—a minimum of well over 200 feet—between the Segments where CIPP lining would occur and the closest land uses where people concentrate will help odors to disperse with distance from the vent points. Additionally, as discussed in the previous item, Segments 231 – 233 and 242 are large-diameter mains that do not have laterals, and per Measure AIR-1, discussed above, the ends of each repair Segment would be plugged prior to lining so the potential for direct subsurface migration of odors should be effectively minimized. Mitigation Measure AIR-1 also provides an avenue for members of the public to report any odor concerns so they can be addressed. Finally, work at all Segments would be temporary and short-term, and—again per Mitigation Measure AIR-1—the City will provide advance notice to neighboring facilities, enabling members of the public who may be particularly sensitive to odors to take precautions. Due to the distance from neighboring facilities, the lack of direct subsurface migration routes for odors, the provisions required by Mitigation Measure AIR-1, and the temporary nature of the potential impact, the potential for the proposed projects to create objectionable odors during construction is considered Less than Significant with Mitigation Measure AIR-1 incorporated. No additional mitigation is required.

Once the repairs are completed, the potential for sewer-related odors would be reduced because the integrity of the repaired sewer Segments would be restored. The projects would also reduce the need for future repairs that could generate odors associated with construction. As a result, No Impact related to generation of objectionable odors is expected over the long term, and a Benefit is likely. No mitigation is required.

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<b>IV. BIOLOGICAL RESOURCES</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/> (nesting birds)	<input checked="" type="checkbox"/> (bats)	<input checked="" type="checkbox"/> (fishes, amphibians, reptiles, other mammals )
(b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Checklist Responses

### Background

As discussed under *Project Settings* in Section 2 of this Initial Study and shown in Figures 1 – 2, all of the proposed repair Segments are located in urbanized portions of the City. Nonetheless, because urban areas can

support important biological and jurisdictional habitat resources, a biological evaluation was conducted for the proposed projects (Vollmar Natural Lands Consulting 2022). It included:

- review of the current (2022) California California Natural Diversity Database<sup>8</sup>, USFWS Information Planning and Consultation System (IPaC)<sup>9</sup>, and aerial photography for the vicinities of the project Segments
- a nine-quadrangle search of the California Native Plant Society's (CNPS's) current (2022) Inventory of Rare and Endangered Plants
- reconnaissance-level pedestrian survey of each Segment and its surrounding area by a qualified ecologist

Results are presented in detail in Appendix B and referenced as appropriate in the analysis below. Analysis also drew on biological studies conducted for previous City sewer repairs along the Guadalupe River east of Segments 231 – 233 and 242 (City of Santa Clara 2019).

### Potential for Adverse Effects on Special-Status Species

Under CEQA, *special-status species* is understood to refer to plants and wildlife considered at risk and protected under a variety of federal, state, and local regulations, including:

- wildlife species that are listed, proposed, or candidates for listing as threatened or endangered under the federal or state Endangered Species Act
- wildlife designated as Species of Special Concern by DFW and/or Species of Concern by the U.S. Fish and Wildlife Service (USFWS)
- wildlife identified as fully protected under the California Fish and Game Code
- additional wildlife species included on DFW's Special Animals List<sup>10</sup>
- birds identified as federal Birds of Conservation Concern
- plants that are state- or federally listed as rare, threatened or endangered, are candidates for state or federal listing, are proposed for state or federal listing, or are identified by the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* as Rank 1, 2, 3, or 4 species

Common birds protected under the federal Migratory Bird Treaty Act are also sometimes considered to qualify as special-status species and they are their active nests, eggs, and young are treated as such in this analysis.

Table 3-5 identifies the special-status wildlife species with potential to occur along the project Segments, and also explains why other special-status species known to be present in the general area are not expected to be found along the Segments proposed for repairs. As detailed in Appendix B, no special-status plants are expected to occur along or in the immediate vicinity of any of the project Segments. Although numerous special-

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<sup>8</sup> The CNDDB, maintained by DFW, is a GIS-based inventory of California locations where special-status plants and animals are known to be present or to have been present in the past.

<sup>9</sup> IPaC, maintained by the U.S. Fish and Wildlife Service, is a GIS-based planning tool that provides online search and mapping for special-status species occurrences, designated critical habitat, and other natural resources, along with other capabilities.

<sup>10</sup> Special Animals is DFW's term for all species tracked in the California Natural Diversity Database, regardless of legal or protection status. The Special Animals List identifies the species DFW considers to be in greatest need of conservation.

status plants are known from the general area, due to the urbanized nature of the project Segments and their surrounds, no habitat suitable for any of these species is present within the areas that would be affected by the proposed repairs.

**Table 3-5. Special-Status Wildlife Presence in Project Vicinity**

Species	Status	Habitat Requirements	Presence at Project Segments
<b>Species Potentially Present</b>			
<u>Birds</u>			
Cooper's Hawk <i>Accipiter cooperii</i>	WL	Nests in coast live oaks and other forest habitat, may use large trees in suburban and urban settings	<b>Potential to occur.</b> Large trees in the vicinity of Segments 231 – 233 and 242 Segments may provide nesting habitat; unlikely to nest in vicinity of Segment 100 due to lack of large trees and high level of disturbance
Burrowing Owl <i>Athene cunicularia</i>	SSC	Prefers open, treeless areas with low, sparse vegetation; found in grasslands, deserts, pastures, agricultural fields, and other habitats, including developed areas offering suitable resources. Nests in small animal burrows	<b>Potential to occur.</b> Small animal burrows potentially suitable for nesting use are present near the west terminus of Segment 231 and the north end of Segment 232 (see Appendix B, Figure 3a)
American Peregrine Falcon <i>Falco peregrinus anatum</i>	FP, FWS:BCC	Typically breeds near water, preferring vertical nesting sites such as cliffs, steep banks, and ledges. Nests and winters in a range of habitats including wetlands, woodlands, forests, agricultural areas, coastal habitats, and cities. Riparian areas and coastal and inland wetlands are important habitats yearlong, especially outside the nesting season	<b>Potential to occur.</b> No suitable nesting habitat is available in proximity to any of the project Segments, but marginal foraging habitat is available around the Lafayette Street Segments, and the species may be present there
<u>Mammals</u>			
Pallid bat <i>Antrozous pallidus</i>	SSC, BLM:S, USFS:S, WBWG:H	Forages in a variety of habitats. Roosts in rocky outcrops, buildings, and hollow trees	<b>Potential to occur.</b> Areas immediately surrounding Segments 231–233 and 242 support potential foraging habitat and offer mature trees and buildings that may provide roosting habitat. Buildings around Segment 100 also provide potential roosting habitat
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SSC, BLM:S, USFS:S, WBWG:H	Prefers mesic habitats; uses communal maternity roosts in caves, tunnels, mines, and buildings	<b>Potential to occur.</b> Area immediately surrounding the Project Area supports potential foraging habitat and buildings that may provide roosting habitat. Buildings around Segment 100

Species	Status	Habitat Requirements	Presence at Project Segments
also provide potential roosting habitat			
<b>Species Not Expected to Be Present</b>			
<u>Invertebrates</u>			
Western ridged mussel <i>Gonidea angulata</i>	SA	Found in freshwater creeks and rivers of all sizes, on substrates ranging from firm mud to coarse sediment. Rarely found in lakes or reservoirs	<b>Not expected.</b> Vicinity of project Segments does not provide suitable habitat
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	Occurs in habitats ranging from small, clear, well-vegetated vernal pools to highly turbid alkali scald pools to large winter lakes	<b>Not expected.</b> Vicinity of project Segments does not provide suitable habitat
Mimic tryonia (California brackishwater snail) <i>Tryonia imitator</i>	SA	Uses permanently flooded areas in coastal lagoons, estuaries, and salt marshes	<b>Not expected.</b> Vicinity of project Segments does not provide suitable habitat
<u>Fishes</u>			
Steelhead, central California coast Distinct Population Segment (DPS) <i>Oncorhynchus mykiss irideus</i> pop. 8	FT	Streams, rivers, lakes, estuaries, open ocean waters	<b>Not expected.</b> No water bodies offering suitable habitat are present in immediate vicinity of project Segments, although steelhead of central California Coast DPS are known to be present in Guadalupe River east of Lafayette Street Segments
Longfin smelt <i>Spirinchus thaleichthys</i>	FC, ST	Typically found in the middle or deeper parts of the water column in nearshore waters, estuaries, and lower portions of freshwater streams. Does not occur in non-tidal riverine habitats	<b>Not expected.</b> No water bodies offering suitable habitat are present in immediate vicinity of project Segments, although this species has been documented in South San Francisco Bay and may be present in the Guadalupe River east of the Lafayette Street Segments
<u>Amphibians and Reptiles</u>			
Northern California legless lizard <i>Anniella pulchra</i>	SSC	Found in sparsely vegetated areas with moist soil	<b>Not expected.</b> Vicinity of project Segments does not provide suitable habitat
Western pond turtle <i>Emys marmorata</i>	SSC	Occurs in permanent and intermittent waters of rivers, creeks, small lakes and ponds, marshes, unlined irrigation canals, and reservoirs	<b>Not expected.</b> Immediate vicinity of project Segments does not provide suitable habitat, although species could use Guadalupe River east of Lafayette Street Segments
Foothill yellow-legged frog <i>Rana boylei</i>	SE, SSE	Found in rocky streams in a variety of habitats	<b>Not expected.</b> Vicinity of project Segments does not provide suitable habitat

Species	Status	Habitat Requirements	Presence at Project Segments
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Uses quiet pools of freshwater streams; may also use ponds and stockponds	<b>Not expected.</b> Immediate vicinity of project Segments does not provide suitable habitat, although marginal habitat is present at City's Eastside Retention Basin east of Lafayette Street
<u>Birds</u>			
Clark's Grebe <i>Aechmophorus clarkii</i>	BCC	Usually nests on large freshwater lakes and marshes with emergent vegetation along the edges; forages in aquatic habitat, mostly for fish	<b>Not expected.</b> Immediate vicinity of project Segments does not provide suitable habitat, although marginal roosting habitat is present at City's Eastside Retention Basin east of Lafayette Street
Tricolored Blackbird <i>Agelaius tricolor</i>	SC, SSC, BLM:S	Nest in large freshwater marshes; forages in open habitats such as pastures and lawns	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although nesting opportunities may be available in marsh along Guadalupe River east of Lafayette Street
Golden Eagle <i>Aquila chrysaetos</i>	FP, BLM:S, WL, FWS: BCC	Constructs large nests on platforms of steep cliffs or in large trees in open areas. Forages in open terrain such as grassland, desert, savannah, or young forest and shrub habitat	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Great Blue Heron <i>Ardea herodias</i>	SA	Found in shallow estuaries and fresh and saline emergent wetlands. Common July–October in salt ponds where fish are numerous	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although marginal habitat is present along Guadalupe River east of Lafayette Street Segments
Black Turnstone <i>Arenaria melanocephala</i>	BCC	Prefers rocky habitats with strong surf along Pacific coastlines for foraging and roosting. Uses arctic coastal lowlands or sedge meadows for nesting	<b>Not expected.</b> Vicinity of project Segments does not offer suitable foraging habitat, although species may be present around San Francisco Bay
Oak Titmouse <i>Baeolophus inornatus</i>	BCC	Prefers open woodlands of oak and pine. Sometimes forages and breeds in riparian areas, and ventures into residential areas. Roosts in cavities in trees or snags	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although marginal habitat is present along Guadalupe River east of Lafayette Street Segments
Swainson's Hawk <i>Buteo swainsoni</i>	BLM:S, FWS:BCC	Forages in open grasslands, prairies, and agricultural fields. Nests in large trees, typically adjacent to riparian habitat	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat

Species	Status	Habitat Requirements	Presence at Project Segments
Lawrence's Goldfinch <i>Carduelis lawrencei</i>	BCC	Mainly nests in dry, open oak woodlands with a freshwater source, but can also nest and forage in pinyon pine–juniper woodlands, coastal scrub, and streamsides. Has been known to use various habitats erratically	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Wrentit <i>Chamaea fasciata</i>	BCC	Nests and forages year-round in chaparral and coastal scrub along the west coast. Away from the coast, forages and nests in dense shrublands, and in northwest California breeds in oak woodlands and mixed forests	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i>	FT, SSC, FWS:BCC	Nests and forages on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Black Tern <i>Chlidonias niger</i>	BCC	Nests in large freshwater wetlands, or sometimes in rice fields or on river islands. Outside the nesting season, forages in tropical ocean waters, along coastlines, or in lagoon, saltpan, marsh, flooded field, and estuary habitat near the coastline	<b>Not expected.</b> Immediate vicinity of project Segments does not provide suitable nesting or foraging habitat, although the salt ponds just south of San Francisco Bay provide foraging habitat
Northern Harrier <i>Circus hudsonius</i>	SSC	Most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Western Yellow-billed Cuckoo <i>Coccyzus americanus occidentalis</i>	FT, SE, FWS:BCC	Prefers large patches of native forest lining rivers and streams; nests in riparian habitat	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Olive-sided Flycatcher <i>Contopus cooperi</i>	BCC	Nests mainly in western coniferous and boreal forests	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Yellow Rail <i>Coturnicops noveboracensis</i>	SSC, USFS:S, FWS:BCC	Nests in densely vegetated coastal tidal marshes, seasonally flooded wetlands, and wet meadows	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
White-tailed Kite <i>Elanus leucurus</i>	FP, BLM:S	Nests near tops of dense oak ( <i>Quercus</i> spp.), willow ( <i>Salix</i> spp.), or other tree stands. Forages in open grasslands, meadows, farmlands, and emergent wetlands	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat

Species	Status	Habitat Requirements	Presence at Project Segments
Saltmarsh Common Yellowthroat <i>Geothlypis trichas sinuosa</i>	SSC, FWS: BCC	Nests in marshy areas, usually off the ground. Occurrences are tied to availability of freshwater and salt marshes with nearby willow thickets	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments
Black Oystercatcher <i>Haematopus bachmani</i>	BCC	Nests and forages in rocky marine habitats. Also forages on open mudflats, and occasionally in open grassy sites adjacent to the ocean	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Bald Eagle <i>Haliaeetus leucocephalus</i>	SE, FP, BCC	Nests in forested areas adjacent to large bodies of water. Perches in tall, mature coniferous or deciduous trees.	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments
California Black Rail <i>Laterallus jamaicensis coturniculus</i>	ST, FP, BLM:S, FWS: BCC	Highly secretive; nests and forages in freshwater marshes and wetland meadows in close proximity to larger Bay waters	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments
Short-billed Dowitcher <i>Limnodromus griseus</i>	BCC	Nests in wetlands, small lakes, wet meadows, and sometimes in river floodplains. During the non-breeding season, mostly forages in saltwater and brackish estuary and lagoon habitat with tidal activity and shallows	<b>Not expected.</b> Immediate vicinity of project Segments does not provide suitable nesting or foraging habitat, although the salt ponds just south of San Francisco Bay provide foraging habitats
Marbled Godwit <i>Limosa fedoa</i>	BCC	Observed along the west coast during the non-breeding season, foraging in estuaries, coastal mudflats, and sandy beaches	<b>Not expected.</b> Immediate vicinity of project Segments does not provide suitable nesting or foraging habitat, although the salt ponds just south of San Francisco Bay provide foraging habitats
Alameda Song Sparrow <i>Melospiza melodia pusillula</i>	SSC, FWS: BCC	Nests and forages in tidal salt marsh	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments
Nuttall's Woodpecker <i>Picoides nuttallii</i>	BCC	Largely resides in oak woodlands in California, but are also known to use wooded suburban areas and woodlands near streams	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments

Species	Status	Habitat Requirements	Presence at Project Segments
California Ridgway's Rail <i>Rallus obsoletus obsoletus</i>	FE, SE, FP	Nests and forages in salt marshes and tidal sloughs	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments
Black Skimmer <i>Rynchops niger</i>	BCC	Typically resides around sandy beaches and islands, but can also reside in large lakes. Also forages in estuaries, lagoons, rivers, creeks, saltmarsh pools, ditches, and tidal waters of bays	<b>Not expected.</b> Vicinity of project Segments does not offer suitable foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments and salt ponds just south of San Francisco Bay
California Thrasher <i>Toxostoma redivivum</i>	BCC	Resides in chaparral habitat and open woodlands of the chaparral transition zones in the northern part of its range	<b>Not expected.</b> Vicinity of project Segments does not provide suitable nesting or foraging habitat
Willet <i>Tringa semipalmata</i>	BCC	Inhabits marshes, open beaches, mudflats, bayshores, and rocky coastal zones	<b>Not expected.</b> Vicinity of project Segments does not offer suitable foraging habitat, although species may be present around San Francisco Bay
<u>Mammals</u>			
Hoary bat <i>Lasiurus cinereus</i>	WBWG:M	Occurs in forested habitat	<b>Not expected.</b> Vicinity of project Segments does not support forest habitat
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	SSC	Prefers areas with chaparral and oak woodlands offering moderate canopy and brushy understory	<b>Not expected.</b> Vicinity of project Segments does not provide suitable habitat
Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE, SE, FP	Requires salt marshes that provide dense cover	<b>Not expected.</b> Vicinity of project Segments does not offer suitable foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments
Salt-marsh wandering shrew <i>Sorex vagrans halicoetes</i>	SSC	Requires salt marshes that provide dense cover	<b>Not expected.</b> Vicinity of project Segments does not offer suitable foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments

**Key to Status Abbreviations:**

- |                                     |  |
|-------------------------------------|--|
| FT = federally listed as Threatened | BLM:S = U.S. Bureau of Land Management Sensitive species       |
| FE = federally listed as Endangered | CI = critically imperiled species                              |
| ST = state-listed as Threatened     | FWS: BCC = USFWS Bird of Conservation Concern                  |
| SE = state-listed as Endangered     | NMFS:SC = National Marine Fisheries Service Species of Concern |
| FC = candidate for federal listing  | USFS:S = U.S. Forest Service Sensitive species                 |
| SC = candidate for state listing    | WBWG:H = Western Bat Working Group high priority species       |

Species	Status	Habitat Requirements	Presence at Project Segments
SOC = federal Species of Concern		WBWG:M = Western Bat Working Group medium priority species	
SSC = state Species of Special Concern		WL = DFW Watch List species	
SA = included on DFW Special Animals List			
FP = fully protected under California Fish and Game Code			

Sources: Vollmar Natural Lands Consulting 2022 (see Appendix B), City of Santa Clara 2019, Yonashiro pers. comm.

The proposed projects’ potential to affect special-status species is discussed in the following paragraphs. Discussion focuses on the construction period, since the proposed repairs would decrease the need for future maintenance activity, and would thus reduce or avoid the potential for long-term impacts on special-status species by comparison with existing baseline conditions.

Special-Status Plants

As noted above, no habitat suitable for special-status plants is present along or in the immediate vicinity of any of the proposed repair Segments. The proposed repairs are thus expected to have No Impact on special-status plants, and no mitigation is required.

Special-Status Wildlife

*Fishes, Amphibians, and Reptiles.* Although the Guadalupe River is known to support special-status fishes, including steelhead assigned to the Central California Coast DPS (*Oncorhynchus mykiss irideus*) and Chinook salmon (*Oncorhynchus tshawytscha*) (e.g., City of Santa Clara 2019), no aquatic habitat suitable to support special-status fishes is present along or in immediate proximity to any of the proposed repair Segments (Vollmar Natural Lands Consulting 2022).

There is some potential that California red-legged frog (*Rana draytonii*) may be present in the Guadalupe River east of the Lafayette Street Segments, and the City’s Eastside Retention Basin offers potentially suitable habitat. However, habitat quality is low, and the Retention Basin is largely isolated from higher-quality habitat farther up the watershed by extensive intervening development. Habitat quality is also low in the Guadalupe River in this area due to tidal influence and brackish salinities. If present, the species would not be abundant at this location (City of Santa Clara 2019), and it is very unlikely to move across inhospitable developed areas toward Lafayette Street.

Western pond turtle (*Emys marmorata*) may also have some potential to be present in the Guadalupe River east of the Lafayette Street Segments, although habitat quality is low in this reach of the River due to tidal influence (City of Santa Clara 2019); western pond turtles typically prefer fresher waters. The species is highly mobile, including overland, but it is considered extremely unlikely to be present in the urbanized, high-traffic area along Lafayette Street even if able to pass through fencing along the river corridor.

No suitable habitat for other special-status amphibian or reptile species is present in the vicinity of any of the Segments.

The proposed repairs are accordingly expected to have No Impact on special-status fishes, amphibians, or reptiles, and no mitigation is required.

*Birds.* A number of special-status birds may be found along the project Segments.

- Cooper’s Hawk (*Accipiter cooperii*) may nest and forage along the Lafayette Street Segments, and could also forage occur in the vicinity of Segment 100, although this is less likely due to the

industrialized nature of the surrounding area. Cooper's Hawk is not expected to nest around Segment 100, due to the lack of suitable large trees (Vollmar Natural Lands Consulting 2022)

- Burrowing Owl (*Athene cunicularia*) may also nest and forage in proximity to the Lafayette Street Segments; several complexes of small mammal burrows suitable for nesting use are present in the median between Lafayette Street and the rail alignment, near the west terminus of Segment 231 and the northern portion of Segment 232 (Vollmar Natural Lands Consulting 2022) (see Appendix B Figure 3a). It is not expected to use the area around Segment 100, which lacks both nesting and foraging opportunities for the species
- American Peregrine Falcon (*Falco peregrinus anatum*) may forage in the vicinity of Lafayette Street, although no suitable nesting habitat is available in proximity to any the proposed repair Segments (Vollmar Natural Lands Consulting 2022). Peregrine falcons are considered unlikely to be found at Segment 100 due to the industrial nature of the area, but cannot be ruled out entirely, since they have been documented in highly urbanized environments (e.g., Golden Gate Audubon Society 2022)

In addition, numerous other common bird species that are protected under the federal Migratory Bird Treaty Act may nest and/or forage along the repair Segments.

The key concern for all of the special-status bird species is disruption of nesting activity by construction disturbance. Foraging birds disturbed by construction would be expected to relocate to other areas, where abundant foraging opportunities of equal or better quality are available. However, if construction disturbs nesting birds, this could result in nest abandonment and mortality of the young. Additionally, in the case of Burrowing Owl, which constructs its nests in small mammal burrows underground, there is potential for direct damage to nests and/or direct injury or mortality of the young as a result of construction ground disturbance. Any of these outcomes could rise to the level of a Significant impact. To address this concern, the City will implement the following mitigation measures. With these measures in place, impacts on protected nesting birds, their nests, eggs, and young would be reduced to a Less than Significant level. No additional mitigation is required.

#### **Mitigation Measure BIO-1. Protection of Nesting Birds (General), All Segments**

If feasible, all project-related activity within 300 feet of the proposed repair Segments will be scheduled between September 1 and January 31, outside the February 1 – August 31 nesting period.

If project-related activity at any Segment occurs during the nesting period, the City will retain a qualified biologist to conduct a preconstruction nesting bird survey covering the Segment footprint and a 300-foot-wide surrounding buffer. The survey will be conducted within 2 weeks of the start of construction-related activity at the Segment. If active nest(s) of any protected species are identified within the 300-foot-wide survey area, a no-activity buffer will be established around the nest for the duration of the nesting season, or until a biologist determines the young have fledged and left the nest, or that the nest has been abandoned. No entry into the no-activity buffer will be permitted. The no-activity buffer will be delineated in the field by or under the supervision of the biologist, using temporary construction fencing or another suitable low-impact medium. The width of the buffer will be determined by the biologist, based on the species involved, the amount of vegetative and other screening between the nest and areas where construction activity will take place, and, if appropriate, other site-specific factors. If special-status species are involved, the biologist will consult with the appropriate resource agency(ies) (California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service) in determining the width of the buffer.

### **Mitigation Measure BIO-2. Protection of Nesting Burrowing Owl, Segments 231 and 232**

If repair work at Segment 231 or Segment 232 occurs during the Western Burrowing Owl nesting season (February 1 – August 31), the City will retain a qualified biologist to conduct preconstruction surveys covering all areas of suitable habitat within 250 feet of the Segment. The survey will last a minimum of 3 hours, and will either begin 1 hour before sunrise and continue until 2 hours after sunrise or begin 2 hours before sunset and continue until 1 hour after sunset. If no owls are detected during a first survey, a second survey will be conducted. If owls are detected during the first survey, a second survey is not needed. All owls observed will be counted and their locations will be mapped.

If evidence of nesting Western Burrowing Owls is found, a 250-foot-wide no-disturbance buffer zone will be established around each occupied nest and will be delineated in the field by the biologist, using a suitable low-impact medium. Construction may proceed outside the no-disturbance buffer zones.

*Mammals.* Two special-status bat species may forage and roost in the vicinity of the proposed repair Segments: pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*). However, the proposed repairs would not require tree trimming or removal—the contractor will be required to protect all trees in place—nor would they involve modification or demolition of structures. There would thus be no effect on bat roosting and no potential for injury or mortality of individuals. As a result, the proposed repairs are not expected to be detrimental to special-status bat populations in the area. Foraging activity in the immediate vicinity of active construction could be temporarily disrupted, but this would be a very short-term and localized effect, and any bats disturbed are expected to disperse to adjacent areas for foraging during construction. Impacts on special-status bats, if any, are therefore expected to be Less than Significant. No mitigation is required.

No suitable habitat for other special-status mammal species is present in proximity to any of the project Segments. There would be No Impact on other special-status mammals, and no mitigation is required.

### **Potential for Adverse Effects on Sensitive Natural Communities**

No sensitive natural communities are present along or in proximity to any of the proposed repair Segments (Vollmar Natural Lands Consulting 2022). As a result, there would be No Impact on any sensitive natural community, and no mitigation is required.

### **Potential for Adverse Effects on Protected Wetlands**

No protected wetlands or jurisdictional Waters are present along or in immediate proximity to any of the repair Segments. A small (approximately 0.05-acre) bioretention pond for stormwater treatment is located just north of Segment 231, in the median between Lafayette Street and the rail alignment to the west, where it collects runoff and input from culverts beneath Lafayette Street. As a stormwater feature constructed in uplands, the pond does not qualify for jurisdictional protection under current rules (CFR 328.3[b][6]). Moreover, it would not be affected by work at Segment 231, which would be limited to CIPP lining of the existing sewer pipe plus manhole repairs at the Segment termini.

None of the proposed repairs would entail entry into or disturbance of any area of protected wetlands or other protected Waters. As a result, No Impact on protected wetlands or other protected Waters is anticipated, and no mitigation is required.

### **Potential to Interfere with Wildlife Movement or Nursery Sites**

All of the proposed repair Segments are in developed areas surrounded by urbanized land uses. None of them offers wildlife nursery sites or is part of a wildlife corridor. Additionally, because the projects would involve only

repairs to existing subsurface sewer infrastructure, they would not result in alteration to surface conditions that could affect wildlife use or passage in their vicinity. As a result, there would be No Impact on wildlife nursery sites or movement corridors, and no mitigation is required.

### Potential to Conflict with Local Policies/Ordinances Protecting Biological Resources

The City's Tree Ordinance (Santa Clara City Code Chapter 12.35) prohibits removal of trees, shrubs, and other plantings from City streets and public spaces without a permit from the Superintendent of Streets. Excavation that may damage public trees or other public plantings is also prohibited without a permit. These requirements apply to private development projects, and enable the City to maintain the green character of public spaces.

Projects proposed and carried out by the City are not subject to the Tree Ordinance. Instead, the City conducts an internal review and does not unnecessarily remove or disturb trees or landscaping. For these projects, no removal or trimming of trees or other landscaping is expected to be necessary; the contractor will be required to protect existing plantings in place during work.

The City's General Plan (City of Santa Clara 2014) also contains several Conservation Goals and a number of supporting policies aimed at protecting the City's natural resources, including the following.

- Goal 5.10.1-G1: The protection of fish, wildlife and their habitats, including rare and endangered species
- Goal 5.10.1-G4: Adequate wastewater treatment and conveyance capacities

The proposed projects would restore wastewater conveyance capacity and reliability and as such are directly supportive of Goal 5.10.1-G4. As discussed in the other items in this checklist section, the proposed projects are also indirectly supportive of Goal 5.10.1-G1, since they would help to prevent future sanitary sewer leaks and spills that could degrade habitat quality.

There would be No Impact related to conflict with local ordinances, goals, or policies, and no mitigation is required.

### Potential to Conflict with an Adopted Conservation Plan

The only adopted conservation plan in the project area is the Santa Clara Valley Habitat Plan (County of Santa Clara et al. 2012). The City is not a signatory to the Plan; there is thus no adopted conservation plan covering the project Segments and their immediate vicinities, and no potential for conflict with such a plan. Nonetheless, the Avoidance and Minimization Measures in the Santa Clara Valley Habitat Plan were taken into consideration in developing the mitigation measures identified above. In view of these factors, there would be No Impact related to conflict with an adopted conservation plan, and no mitigation is required.

### References Cited in this Section

City of Santa Clara. 2014. Celebrating Our Past, Present and Future: City of Santa Clara 2010 – 2035 General Plan. Last updated December 2014. Available: <http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan>. Downloaded: January 2019.

City of Santa Clara. 2019. Sanitary Sewer Condition Assessment Repairs, Initial Study and Proposed Mitigated Negative Declaration (June). Prepared for the City of Santa Clara by Redtail Consulting, Fremont, CA. Available: <https://www.santaclaraca.gov/Home/Components/BusinessDirectory/BusinessDirectory/335/3649?alpha=S>. Accessed: April 2022.

County of Santa Clara, City of San José, City of Morgan Hill, City of Gilroy, Santa Clara Valley Water District, and Santa Clara Valley Transportation Authority. 2012. Final Santa Clara Valley Habitat Plan, Santa Clara County, California. Available: <https://scv-habitatagency.org/178/Santa-Clara-Valley-Habitat-Plan>. Accessed: July 2018.

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Vollmar Natural Lands Consulting. 2022. Biological Habitat Evaluation, Annual Sanitary Sewer Repairs 2021, 2022, and 2023 Projects, 2021 Construction Package, City of Santa Clara, Santa Clara County, California. Berkeley and Sacramento, CA. Prepared for Redtail Consulting, Fremont, CA; Mott MacDonald, San José, CA; and City of Santa Clara. (Appendix B to this Initial Study.)

Yonashiro, M. (Vollmar Natural Lands Consulting). Pers. comm. Written communication to Anna Busing (Redtail Consulting), via email April 27, 2022. On file with Redtail Consulting.

<b>V. CULTURAL RESOURCES</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) Cause a substantial adverse change in the significance of a historical resource pursuant to <i>CEQA Guidelines</i> Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to <i>CEQA Guidelines</i> Section 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Discussion of Checklist Responses

### CEQA Requirements

CEQA protects historical resources in general, and also extends specific guidance for the treatment of artifacts, objects, and sites that qualify as unique archaeological resources.

As defined under CEQA, *historical resources* encompass the span of the state’s prehistoric and historic heritage. They include sites, buildings, structures, areas, objects, and documents that are historically or archaeologically significant, or significant in the “architectural, engineering, scientific, economic, educational, social, political, or cultural annals of California,” and meet one or more of the following criteria.

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- (2) Is associated with the lives of persons important in our past
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- (4) Has yielded, or may be likely to yield, information important in prehistory or history (*CEQA Guidelines* 15064.5[a][3])

Resources included on the California Register of Historical Resources (CRHR), or on a local register, typically meet these requirements and are considered historical resources for CEQA purposes (*CEQA Guidelines* 15064.5[a][1–2]). Additionally, lead agencies may determine that a resource that does not qualify for CRHR or local register listing is nonetheless significant and may treat it as a historical resource meriting protection under CEQA (*CEQA Guidelines* 15064.5[a][4]).

*Unique archaeological resources* are resources with particularly important informational or heritage value. They are defined in the CEQA statute as including artifacts, objects, and sites that meet any of the following criteria.

- Contains information needed to answer important scientific research questions and in which there is a demonstrable public interest
- Has a special and particular quality such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (California Public Resources Code 21083.2[g])

The CEQA statute and *CEQA Guidelines* require lead agencies to evaluate the potential for projects they undertake, permit, or fund to affect historical resources, including both non-unique and unique archaeological resources (California Public Resources Code 21083.2, *CEQA Guidelines* 15064.5). Project outcomes that would materially affect the significance of a historical resource are considered significant impacts under CEQA. Such outcomes include physical demolition, destruction, relocation, and alteration of the resource or its immediate surroundings (its context) (*CEQA Guidelines* 15064.5[b][2]). CEQA also identifies means to evaluate and mitigate impacts on historical resources (California Public Resources Code 21083.2).

### Historical Resources Evaluation for Proposed Projects

The historical resources review conducted for the proposed repairs (Basin Research Associates 2022) is described in the technical memorandum presented as Appendix C to this Initial Study. The review was conducted in accordance with the requirements of CEQA and the *CEQA Guidelines*, and included the following activities.

- A search of records on file with the California Historical Resources Information System's Northwest Information Center at Sonoma State University (CHRIS/NWIC) for information on prior studies and known historical resources within the each of the project Segment footprints and a surrounding 500-foot-wide buffer
- Review of National Register of Historic Places (NRHP) listings in Santa Clara County, as well as the CRHR, various resources of the State Office of Historic Preservation, and other relevant sources

- Outreach to the Native American Heritage Commission (NAHC) for information in their Sacred Lands File
- Outreach to local Native American individuals and groups identified by the NAHC as potentially able to provide additional information

Typically, evaluations of this type would include a pedestrian reconnaissance survey of the project footprints, to assess the potential that previously unrecorded resources may be present. In this case, however, pedestrian reconnaissance was not expected to provide significant informational value. This is because all of the project footprints are either within existing paved roadways where native soil materials are not exposed (Segments 100, 233, 242), or are within a combination of paved roadways and heavily disturbed unpaved areas that have been graded and/or filled for existing site uses and were not expected to show surface evidence of archaeological materials even if present (Segments 231, 232).

A total of 11 previous reports for areas including or adjacent to the five proposed repair Segments were reviewed. No recorded archaeological resources are located within 500 feet of any of the Segments, and the review concluded that both prehistoric and historic archaeological sensitivity within the Segment alignments is low, based on the absence of recorded sites and the existing level of disturbance along the Segments from urban development in past decades. No known Native American villages, trails, traditional use areas, contemporary use areas, or other features of cultural significance were identified in proximity to any of the Segments. No known Hispanic Period expedition routes, adobe dwellings, or other features have been reported in proximity to any of the Segments. No structures, landmarks, or points of interest of local, state, or federal historic or architectural significance have been identified within or adjacent to the Segments, and no sites listed eligible, or potentially eligible for CRHR listing have been identified in proximity to any of the Segments (Basin Research Associates 2022).

The results of NAHC's Sacred Lands File review were positive, and letters were sent to the 11 locally knowledgeable Native American contacts identified by NAHC to determine whether any potential resources of interest to the Native American community were present:

- Kanyon Sayers-Roods, Indian Canyon Mutsun Band of Costanoan, San José
- Quirina Luna Geary, Chairperson, Tamien Nation, San José
- Andrew Galvan, The Ohlone Indian Tribe, Fremont
- Monica Arellano, Vice Chairwoman, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, Castro Valley
- Valentin Lopez, Chairperson, Amah Mutsun Tribal Band, Galt
- Irenne Zwierlein, Chairperson, Amah Mutsun Tribal Band of Mission San Juan Bautista, Lakeport
- Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan, Hollister
- Katherine Perez, Chairperson, North Valley Yokuts Tribe, Linden
- Timothy Perez, North Valley Yokuts Tribe, Linden
- Kenneth Woodrow, Chairperson, Wuksache Indian Tribe/Eshom Valley Band, Salinas
- Johnathan Wasaka Costillas, Tribal Historic Preservation Officer, Tamien Nation, Clearlake Oaks

As of October 2022 no responses have been received (Basin Research Associates 2022, Busby pers. comm.).

### Potential for Adverse Change in Significance of Historical Resources

As described above, no recorded historic resources are present along or in proximity to any of the Segments proposed for repair, and no resources of concern have been identified as a result of outreach to locally knowledgeable Native American contacts. Moreover, the proposed repairs would not result in any new above-grade installations and thus would not affect the overall context of the surrounding built environment in the vicinity of these Segments. As a result, the proposed repairs are expected to have No Impact on historic resources, and no mitigation is required. (Please note that archaeological resources are discussed in the next paragraph.)

### Potential for Adverse Change in Significance of Archaeological Resources

No recorded archaeological resources of any kind, and therefore no unique archaeological resources, have been identified in the vicinity of any of the project Segments, and—as noted above—no resources were identified as a result of outreach to locally knowledgeable Native American contacts. Based on the results of the historical resources review, all of the Segments are considered to have low sensitivity for the presence of previously unrecorded archaeological resources. Nonetheless—as always with ground disturbance in the Bay Area, which has a long and complex history of human habitation—there may still be some potential for unanticipated discoveries during excavation. At worst, disturbance or destruction of such resources could rise to a level considered Significant under CEQA. To address the potential for unanticipated discoveries during project construction and maintenance, the City will implement the following mitigation measures. With these measures incorporated, impacts related to potential disturbance and destruction of archaeological resources would be reduced to a level considered Less than Significant under CEQA.

#### **Mitigation Measure CUL-1. Notice of Potential for Buried Cultural Resources in Construction Documents**

The potential to encounter buried cultural resources, including Native American burials, will be noted in the project construction documents.

#### **Mitigation Measure CUL-2. Retention of On-Call Archaeologist**

Prior to construction, the City will retain a qualified professional archaeologist (City's Archaeologist) with experience in northern and central California archaeology on an on-call basis for the duration of all ground-disturbing activities. The City's Archaeologist will be responsible for reviewing, identifying, and evaluating cultural resources (if any) exposed during construction, for determining whether they qualify as *unique archaeological resource(s)* under CEQA, and, if needed, recommending and implementing appropriate follow-up treatment.

#### **Mitigation Measure CUL-3. Worker Awareness Training for Archaeological Resources**

Prior to groundbreaking at each of the Segments, the City's Archaeologist (defined in Mitigation Measure CUL-2) will develop and present worker awareness training for archaeological resources. Training will include information on the possibility of encountering resources during construction; the types of resources that may be seen and how to recognize them; and proper procedures in the event resources are encountered, including points of contact. All field management and supervisory personnel and construction workers involved with ground-disturbing activities will be required to take this training prior to beginning work on the project. Upon completion of the training, workers will be required to sign a form stating that they attended the training, understand, and will comply with the information presented.

#### **Mitigation Measure CUL-4. Evaluation and Treatment of Unanticipated Archaeological Discoveries**

If known or suspected archaeological resources are discovered during construction, work in the immediate area of the find will cease and the contractor will be required to notify the City before the end of the work day. The find will be protected in place until the City's Archaeologist has evaluated it and identified appropriate follow-up measures, if any. If the City's Archaeologist determines that the resource qualifies as a *unique archaeological resource* under CEQA, they will notify the City and other appropriate parties and recommend follow-up measures to reduce impacts, in accordance with Section 15064.5 of the *CEQA Guidelines*. Depending on the nature of the find, follow-up measures may include avoidance, preservation in place, recordation, monitoring during ongoing work, additional archaeological testing, and data recovery, among other options. The City's Archaeologist may recommend completion of a formal Archaeological Monitoring Plan (AMP) and/or Archaeological Treatment Plan (ATP), potentially including data recovery, if significant archaeological deposits are exposed during ground-disturbing activities. The City will be responsible for proper implementation of the AMP and ATP. If archaeological evaluation, monitoring, or treatment is required, the City's Archaeologist will prepare and file a Monitoring Closure Report with the City, documenting the nature of the find(s), evaluation methods, and outcomes.

#### **Potential for Disturbance of Human Remains**

Because the areas around the project Segments are not considered sensitive for archaeological resources, project-related ground disturbance is considered unlikely to encounter or disturb human remains. The possibility cannot be entirely ruled out, however, and any disturbance of human remains would constitute a Significant impact under CEQA. To address the potential for unanticipated disturbance of human remains, the City will implement the following mitigation measure. With this measure incorporated, impacts related to potential disturbance of human remains would be Less than Significant.

#### **Mitigation Measure CUL-5. Procedures for Discovery of Human Remains**

The treatment of human remains and funerary objects discovered during any project related ground-disturbing activity will comply with all applicable state laws. If known or potential human remains are encountered during project-related activities, work within 50 feet of the discovery and in any nearby areas reasonably suspected to overlie adjacent remains will cease, the find will be protected in place, and the contractor will be required to notify the City before the end of the work day. The City will promptly notify the Santa Clara County Coroner, who will be responsible for determining whether the remains are Native American. If the Coroner determines that the remains are Native American and are not subject to their authority, they will notify the Native American Heritage Commission, which is responsible for identifying and notifying descendant(s) of the deceased so they can make recommendations regarding the treatment of the remains. The City will be responsible for facilitating the disposition of remains recommended by the Most Likely Descendant(s). If no satisfactory agreement can be reached as to the disposition of the remains pursuant to state law, the City will respectfully reinter the human remains and items associated with the burial on City property in a location not subject to further subsurface disturbance. A final report detailing the find, follow-up activities, and disposition of remains will be prepared by the City's Archaeologist or other qualified staff, and will be submitted to the City's Director of Community Development promptly following disposition of the remains. The report will be subject to review and approval by the City's Director of Community Development.

## References Cited in this Section

Basin Research Associates. 2022. Cultural Resources Review, Five Sanitary Sewer Repair Locations, Lafayette Street and Mathew Street, City of Santa Clara, Santa Clara County. Prepared for Redtail Consulting (Fremont, CA), Mott MacDonald (San José, CA), and City of Santa Clara. Appendix C to this Initial Study.

Busby, C.I. (Basin Research Associates). Pers. comm. Email to Anna Busing (Redtail Consulting), October 5, 2022. On file with Redtail Consulting.

<b>VI. ENERGY</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<i>Would the project:</i>				
(a) Result in potentially significant environmental impact(s) due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■ (potential long-term Benefit)
(b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■

## Discussion of Checklist Responses

### Potential to Result in Wasteful, Inefficient, or Unnecessary Energy Consumption

Implementation of the proposed repairs would entail direct consumption of energy in the form of vehicle and hand equipment fuels and possibly also grid electricity. It would also entail indirect consumption of the energy associated with production of the materials used in the repairs: the materials used for replacement of the existing defective sewer pipe and manhole components at Segment 100, and the liners, resins, and curing media used in CIPP lining at Segments 231 – 233 and 242. However, the scope of activities at each Segment would be extremely limited and the duration of the work would be short, effectively limiting the extent of direct energy consumption. The volume of materials used would also be limited by the focused scope of the repair activities, reducing indirect consumption of materials. Additionally, it will be in the contractor’s best economic interests to avoid waste of materials, placing an additional pragmatic limit on the potential for indirect energy consumption. As a result, No Impact is anticipated with regard to wasteful, inefficient, or unnecessary consumption of energy resources during construction. No mitigation is required.

Once the facilities at Segments 100, 231 – 233, and 242 are repaired, normal operations and maintenance of these Segments would resume. Maintenance needs would likely decrease by comparison with pre-project conditions, since the repairs would restore the integrity of the project Segments. Consequently, there would be no long-term increase in direct or indirect energy consumption as a result of the proposed repairs, and, over the long term, No Impact with regard to wasteful, inefficient, or unnecessary consumption of energy resources. Rather, with the need for maintenance decreased for the next several decades, there would likely be a long-term Benefit with regard to energy consumption. No mitigation is required.

## Potential to Conflict with or Obstruct Energy-Related Plans

The City does not have a plan document that focuses specifically on energy usage. However, the City has adopted reach codes (City Ordinance No. 2034)—that is, amendments to the City’s adopted building standards that “reach” or extend beyond the minimum state requirements for building energy use. These focus on electrifying new buildings, improving the efficiency of building energy use, and expanding the City’s electric vehicle charging infrastructure. As such, the reach codes are not directly relevant to the proposed projects, and the projects would have no potential to conflict with them.

The City also has a Climate Action Plan, originally adopted in 2013 in response to a General Plan mandate (see City of Santa Clara 2014)<sup>11</sup> and updated in June 2022. The 2013 Climate Action Plan (City of Santa Clara 2013) was developed in consistency with

- California Assembly Bill 32 (California Global Warming Solutions Act of 2006)
- California Senate Bill 375 (Sustainable Communities and Climate Protection Act of 2008)
- amendments to the *CEQA Guidelines* adopted in 2009, revising the Guidelines to specifically address GHG emissions and laying out a process to streamline review of certain projects by lead agencies with a qualifying GHG reductions plan in place

The recent update to the Climate Action Plan (City of Santa Clara 2022) brought the plan current with additional state directives, including

- Executive Order B-30-15 and Senate Bill 32, which expanded on AB 32 by requiring statewide reduction of GHG emissions to 40% below 1990 levels by the year 2030
- Executive Order B-55-18, which established a statewide goal of carbon neutrality by 2045

While not technically a renewable energy or energy efficiency plan, the Climate Action Plan does emphasize sustainability. It identifies and commits the City to a range of actions aimed at

- (1) preventing and slowing climate change effects by reducing GHG emissions and increasing available carbon sinks to absorb and store GHGs
- (2) managing unavoidable effects of climate change and protecting vulnerable populations, ecosystems, resources, and infrastructure

These include measures aimed at improving energy efficiency, increasing reliance on renewable energy sources, and reducing consumption of fossil fuels. Some of these apply to City infrastructure and operations, but none are directly relevant to comparatively small repairs to existing infrastructure such as the proposed projects. Nonetheless, by supporting efficient operation of the City’s sanitary sewer system, the proposed projects are considered broadly consistent with the Climate Action Plan’s emphasis on sustainability, and they would not in any way impede Climate Action Plan implementation.

Consequently, there would be No Impact with regard to conflict with or obstruction of any adopted plan for renewable energy or energy efficiency, and no mitigation is required.

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<sup>11</sup> The City’s current General Plan was adopted in 2010 and updated in 2014.

## References Cited in this Section

City of Santa Clara. 2014. Celebrating Our Past, Present and Future: City of Santa Clara 2010 – 2035 General Plan. Last updated December 2014. Available: <http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan>. Downloaded: January 2019.

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City of Santa Clara. 2022. Climate Action Plan. Available: <https://www.santaclaraca.gov/our-city/departments-a-f/community-development/planning-division/general-plan/climate-action-plan>. Downloaded: October 2022.

<b>VII. GEOLOGY &amp; SOILS</b>				
<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (soil erosion, all Segments; topsoil loss, Segment 231)	<input checked="" type="checkbox"/> (topsoil loss, Segments 100, 232, 233, 242)
(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, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (excavation cuts)	<input checked="" type="checkbox"/> (compressible soils)

<b>VII. GEOLOGY &amp; SOILS</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<i>Would the project:</i>				
(d) Be located on expansive soil, as defined in the applicable building code, creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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 waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/> (paleontological resources)	<input type="checkbox"/>	<input checked="" type="checkbox"/> (geologic features)

## Discussion of Checklist Responses

### Background

Geologic hazards are regulated at state and local levels. The principal state regulations governing assessment and mitigation of risks related to geologic hazards are California’s Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazards Mapping Act, which establish statewide processes to identify hazard areas and assign local jurisdictions the responsibility of evaluating and mitigating hazards within designated hazard areas.

The Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code Sec. 2621 *et seq.*) prohibits the location of most types of structures intended for human occupancy across the traces of active faults and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It gives legal weight to terms such as “active,” defines criteria for identifying faults that qualify as active, and establishes a process for local jurisdiction review of building proposals within Earthquake Fault Zones. Under the Alquist-Priolo Act, the state is responsible for mapping active faults and defining the boundaries within which geologic investigations are required as an input to the local jurisdiction project approvals. Local jurisdictions—cities and counties—are responsible for implementing the provisions of the Act, with permit review as the enforcement mechanism.

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act (California Public Resources Code Sections 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act focuses on corollary or “secondary” hazards, including liquefaction<sup>12</sup> and seismically induced landslides. The Seismic Hazards Mapping Act charges the state with identifying and mapping areas at risk of secondary seismic hazards, and requires local jurisdictions to regulate development within mapped Seismic Hazard Zones. As with the Alquist-Priolo Act, permit review is the primary mechanism for local regulation of development; local jurisdictions are prohibited from issuing development

<sup>12</sup> Liquefaction occurs when seismic groundshaking causes saturated materials in the subsurface to lose their strength and flow, or behave as a liquid, and can lead to substantial structural damage, particularly to poorly designed structures.

permits for sites within designated Seismic Hazard Zones until appropriate site-specific geologic and geotechnical investigations have been conducted and measures to reduce potential damage have been incorporated into the development plans.

The California Geological Survey publishes regulatory maps (available at <http://maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/>) showing the location and extent of the state's Earthquake Fault Zones and Seismic Hazards Zones. As noted above, local jurisdictions must enforce the requirements of the Alquist-Priolo Act and Seismic Hazards Mapping Act within the areas delineated on the state's regulatory maps, but they may also choose to zone additional faults as active or identify additional areas at risk from secondary seismic hazards. Santa Clara County is one of the California jurisdictions that have elected to publish and enforce additional hazard zoning. The County Geologic Hazard Zones maps are available at [www.sccgov.org/sites/dpd/PlansOrdinances/GeoHazards/Pages/GeoMaps.aspx](http://www.sccgov.org/sites/dpd/PlansOrdinances/GeoHazards/Pages/GeoMaps.aspx).

Building codes, which are relevant to geologic hazards and seismic safety because they establish standards for earthwork/grading, foundation design, and seismic safety, are adopted at the local jurisdiction level. The City's adopted building code is the 2019 California Building Standards Code, inclusive of Appendix J (*Grading*).

### Potential for Exposure to Surface Fault Rupture

None of the project Segments is within or in close proximity to any Earthquake Fault Zone defined by the State of California or the County of Santa Clara (California Geological Survey 2002, 2004; County of Santa Clara 2022). As a result they are considered to be at minimal risk from surface fault rupture. No Impact related to surface fault rupture is anticipated, and no mitigation is required.

### Potential for Exposure to Seismic Groundshaking

Like the rest of the greater Bay Area and much of California, the City is potentially subject to strong seismic groundshaking. However, the proposed projects would entail repairs to existing sanitary sewer infrastructure; they would not increase sewer capacity and thus would have no potential to indirectly increase populations in the project vicinity (see *Population & Housing* section of this checklist). As a result they would have no potential to expose additional people to seismic groundshaking hazards. Similarly, because the proposed projects would involve existing infrastructure, they would have no potential to expose new facilities to potential damage due to seismic groundshaking. There would be No Impact with regard to such exposure, and no mitigation is required.

### Potential for Exposure to Seismically Induced Ground Failure

All of the project Segments are within Liquefaction Hazard Zones defined by the state and County (State of California 2002, 2004; County of Santa Clara 2022). The proposed projects are therefore considered subject to liquefaction risk. However, as the previous item identifies, the projects would not increase sewer capacity and thus would have no potential to increase population in the project areas. They would thus have no potential to expose additional people to risks associated with liquefaction hazards. Additionally, because the proposed projects would involve only existing infrastructure, they would not expose new facilities to potential damage due to liquefaction. There would be No Impact related to increased exposure of people or facilities to liquefaction hazards, and no mitigation is required.

### Potential for Exposure to Landslide Hazards

None of the project Segments is within a Seismically Induced Landslide defined by the State of California (California Geological Survey 2002, 2004) or the Landslide Zone defined by the County of Santa Clara (County of Santa Clara 2022). Moreover, all of the Segments are located on nearly flat topography at substantial distances from the range fronts bounding the Santa Clara Valley. As a result, they are not considered to be at

risk from seismically induced landslides or from landslides in general. No Impact related to landslides is anticipated, and no mitigation is required.

### Potential for Soil Erosion or Loss of Topsoil

The proposed projects would not entail ground disturbance over the long term. Discussion under this item therefore focuses on potential impacts associated with the proposed repair activities.

#### Soil Erosion

CIPP lining does not require excavation, grading, or other ground disturbance. With these repair techniques, all work is accomplished from within the existing sewer pipe, with entry via existing manholes. Consequently, there would be No Impact with regard to soil erosion as a result of CIPP lining at Segments 231 – 233 and 242.

Excavation would be required at Segment 100 for open cut replacement of the defective sewer pipe and for removal and replacement of SSMH 57-35 at the west terminus. Minor, localized excavation would also be required for replacement of manhole cones at both termini of Segment 231 (SSMH 114-14, SSMH 114-23), the south terminus of Segment 232 (SSMH 204-9), the south terminus of Segment 233 (SSMH 104-15), and both termini of Segment 242 (SSMH 104-17, SSMH 104-22).

With the exception of Segment 231, all of these locations are entirely within paved areas; existing pavement would remain in place around the excavations and would help to control erosion. At Segment 231, there would be slightly greater potential for local acceleration of soil erosion due to ground disturbance. However, the extent of disturbance would be very small and the duration of work involving excavation would be short (10 days at Segment 100, where open cut replacement of the sewer pipe and one manhole is required, and just a few days at each of the other Segments for manhole cone replacement). Additionally, the City's Standard Specifications require contractors to implement site-appropriate erosion control measures during ground-disturbing activities at any site. As a result, the potential for soil erosion at all Segments would be reduced consistent with current best practices. The overall risk of accelerated soil erosion would thus be very limited, and impacts, if any, would be Less than Significant. No mitigation is required.

#### Loss of Topsoil

All of the proposed repair Segments except Segment 231 are entirely within areas that have been disturbed, graded, and paved for construction of existing roadways, and are thus considered extremely unlikely to preserve a topsoil layer. No Impact with regard to loss of topsoil is anticipated at Segments 100, 232, 233, and 242.

The termini of Segment 231 are in unpaved areas where some topsoil is presumed to be present since there is vegetation. However, based on their location and aerial photograph signatures, both termini of Segment 231 have been graded and substantially disturbed for prior development. As a result, the topsoil resource here is unlikely to be intact and is probably of limited quality as well. Moreover, excavation would be limited to a very small area in the immediate vicinity of existing SSMH 114-14 and SSMH 114-23, where prior disturbance has likely been greater as a result of sewer construction. As a result, loss of topsoil at Segment 231, if any, would be very limited and is considered Less than Significant.

No mitigation is required.

### Potential for Location on Unstable Substrate Materials

Issues related to liquefaction and slope stability are discussed in previous items, above. This discussion focuses on compressible soil hazards and the potential for unstable excavation cuts.

### Compressible Soils

Compressible soils are clay and/or organic material-rich soils that are prone to compaction or subsidence when a load is applied, such as fill placed to create a building pad, or the weight of a newly constructed building. Compressible soils can be problematic since they may necessitate remedial measures or specialized foundation designs.

None of the Segments is within the Compressible Soils Hazard Zone defined by the County (County of Santa Clara 2022). No Impact with regard to compressible soils is anticipated, and no mitigation is required.

### Unstable Excavation Cuts

As described in the previous item, minor excavation would be required for manhole replacement at Segment 100 and manhole cone replacement at Segments 231 – 233 and 242. Any excavation carries some risk of instability, but risks would be effectively minimized by adherence to building codes (in this case, the 2019 California Building Code, which is the City’s adopted code) and requirements of the City’s Standard Specifications. Excavations would also be very limited in extent, and would remain open for a very short time (no more than a few days) before being backfilled. The potential for the projects to create unstable conditions related to excavation is therefore considered Less than Significant, and no mitigation is required.

### Potential for Location on Expansive Soils

Table 3-6 provides an overview of soils mapped by the Natural Resources Conservation Service at each of the Segments.

**Table 3-6. Overview of Soils by Segment**

Segment	Soils	Characteristics	Expansive?
100	Urban land, 0 – 2% slopes, basins	Disturbed and artificially placed (fill) soils of flat-lying and very gently sloping urbanized areas on the floor of the Santa Clara Valley	Where engineered fill is present, no
231 232 233	Embarcadero silty clay loam drained, 0 – 2% slopes	Native soils formed in alluvium of flat-lying and very gently sloping valley floor areas. Up to 7 inches of clay loam overlying clay and silty clay to a depth of approximately 47 inches; clay loam from approximately 47 to 61 inches, overlying silty clay to a depth of approximately 100 inches. Very poorly drained. Very slightly to moderately saline, calcium carbonate content to 35%, gypsum content to maximum 5%	Potentially, where clays are present (clay loam and clay soils)
242	Urban land – Clear Lake complex, 0 – 2% slopes, protected	Disturbed and artificially placed (fill) soils; native soils formed in alluvium of flat-lying and very gently sloping valley floor areas. Silty clay to a depth of approximately 66 inches. Poorly drained. Nonsaline to very slightly saline, calcium carbonate content to 5% gypsum content to 1%	Where engineered fill is present, no. Native silty clay soils may be expansive

Source: Natural Resources Conservation Service 2019

As shown in Table 3-6, some of the project Segments are located on soil units that have the potential to be expansive. However, the projects entail repairs to existing infrastructure; no new structures or facilities would be

added, so the repairs would not increase the exposure of infrastructure to potential damage associated with expansive soil conditions. Moreover, by restoring the integrity of the project Segments, the proposed repairs, if anything, would reduce the potential for expansive soils (if present) to affect sanitary sewer components. There would be No Impact, and no mitigation is required.

### Potential for Impacts Related to Septic Tanks/Alternative Wastewater Disposal Systems

The proposed projects focus exclusively on repairs to sewer infrastructure and would involve existing facilities only. No septic facilities or alternative wastewater disposal systems would be constructed. There would be No Impact related to septic tanks or alternative wastewater disposal systems, and no mitigation is required.

### Potential for Destruction of Paleontological Resources or Geological Features

#### Significant Paleontological Resources

Paleontological (fossil) resources include preserved remains of past plants and animals as well as animal burrows, traces, tracks, and trackways. They are protected under federal and state regulations, including CEQA, because of their heritage value and their potential to provide scientifically important information.

Fossil materials may be buried in sediment or rock units below the ground surface, such that their presence or absence cannot be determined with certainty in advance of project groundbreaking. As a result, evaluating the potential for impacts on paleontological resources is essentially a risk analysis that addresses two questions:

- What is the likelihood that scientifically important (significant) paleontological resources<sup>13</sup> are present in the project area? and
- If present, would such resources be disturbed, damaged, or destroyed as a result of project activities?

The likelihood that significant fossil resources are present is based on the documented “track record” of the geologic units in the project area with regard to fossil finds. Units that have produced important fossil finds in the past are considered likely to contain additional materials and are considered sensitive for paleontological resources. The potential for loss of paleontological resources is directly related to the extent of project-related ground disturbance, and particularly ground disturbance involving previously undisturbed substrate materials. The proposed projects would not entail or require ground disturbance over the long term. Discussion under this item therefore focuses on potential impacts associated with the proposed repair activities.

Mapping by the U.S. Geological Survey shows Segments 100 and 242 as situated on basin deposits of Holocene age (less than about 11,000 years old), and Segments 231 – 233 on Bay Mud, also of Holocene age (no older than about 11,000 years but likely 5,000 – 6,000 years old in this vicinity) (Wentworth et al. 1999). The basin deposits consist of very fine silty clay rich in organic material, recording deposition in floodplain/basin floor areas. The Bay Mud consists of unconsolidated dark-colored clay and silty clay (Wentworth et al. 1999).

Holocene materials in general are not considered highly sensitive for paleontological resources, although the University of California Museum of Paleontology’s online collections database now contains several recently added records for localities in the Holocene of Santa Clara County (University of California Museum of

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<sup>13</sup> The Society of Vertebrate Paleontology (SVP) defines *significant paleontological resources* as including “fossils and fossiliferous deposits... consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information.” The SVP limits the definition of *paleontological resources* to materials more than about 5,000 years old (Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee 2010). The SVP’s approach to paleontological resources evaluation, impact analysis, and mitigation was specifically developed to assist lead agencies in complying with CEQA protections for paleontological resources and is adopted here.

Paleontology 2022). These include invertebrate finds from Mayfield and Charlston Sloughs in the Palo Alto area and a site in Sunnyvale, and pollen from Triangle Marsh on Coyote Slough. Unspecified finds were also made at sites along the Guadalupe River and Alum Creek. Additionally—and importantly for all projects in the northern Santa Clara Valley—the 2005 discovery of Columbian mammoth (*Mammuthus columbi*) remains in Holocene-mapped strata along Valley Water’s Guadalupe River right-of-way in San José (University of California Museum of Paleontology 2005) indicates that Holocene-mapped materials in the Santa Clara Valley area may have previously unrecognized potential to contain significant fossil materials. An extra degree of caution is therefore likely to be warranted when dealing with Holocene-mapped materials in the Santa Clara Valley area, and particularly in the northern portion of the Valley, in proximity to the site of the 2005 mammoth find.

Surface-exposed Holocene strata in the vicinity of all Segments are presumed based on well documented regional geologic relationships to be underlain at depth by older units of Pleistocene age. Pleistocene strata throughout California are treated as paleontologically sensitive because they have produced a wealth of significant fossil finds.

As noted in previous items, excavation would be required at Segment 100 for open cut replacement of the defective sewer pipe and for removal and replacement of SSMH 57-35. Minor, localized excavation would also be required for replacement of manhole cones at both termini of Segment 231, the south terminus of Segment 232, the south terminus of Segment 233, and both termini of Segment 242. Maximum depths of excavation would be on the order of 8 – 10 feet along Segment 100, and somewhat shallower at the other Segments, where only manhole cone replacement would be required.

At all of these locations, much of the material involved in the excavations would be previously disturbed as a result of sewer construction and manhole installation. However, there may also be potential to encounter undisturbed substrate materials, particularly at the base of the Segment 100 excavations and in other locations if the excavation needs to be widened beyond the original footprint involved in installation. Excavation within previously undisturbed materials may have some potential to encounter, damage, or destroy significant fossil resources. It is difficult to assess the level of risk precisely, and extensive loss is considered unlikely, but there could be some potential for impacts at their potential worst to rise to a level considered Significant under CEQA. To avoid Significant impacts, the City will implement the following mitigation measures. With these measures incorporated, impacts related to potential disturbance and destruction of significant paleontological resources would be Less than Significant.

**Mitigation Measure GEO-1. Worker Awareness Training for Paleontological Resources**

Prior to groundbreaking, the City will retain qualified staff to develop and present in-person, hands-on worker awareness training for paleontological resources. As used here, *qualified staff* refers to an individual who satisfies one or both of the following criteria.

- A Principal Paleontologist as defined by the California Department of Transportation (2014) or a qualified professional paleontologist as defined by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee 2010), who is experienced in delivering training to nonspecialists
- A California-licensed professional geologist (PG) who has expertise in South San Francisco Bay Area stratigraphy and paleontology and is experienced in delivering training to nonspecialists

Training will be concise and substantive. It will include information on the possibility of encountering

fossils during construction; the types of fossils that may be seen and how to recognize them; and proper procedures in the event fossils are encountered. All field management and supervisory personnel and construction workers involved with ground-disturbing activities will be required to take this training prior to beginning work on the project. Upon completion of the training, workers will be required to sign a form stating that they attended the training, understand, and will comply with the information presented.

### **Mitigation Measure GEO-2. Stop-Work, Evaluation, and Treatment in the Event of a Paleontological Find**

If vertebrate remains or other potentially significant fossil resources are discovered during project-related activities, all work in the immediate vicinity of the discovery will cease, the find will be protected in place, and the contractor will be required to notify the City before the end of the work day. The City will detail qualified staff—i.e., staff meeting the criteria for a Qualified Professional Paleontologist as defined by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee 2010)—to evaluate the find and recommend appropriate follow-up treatment. Work may continue on other parts of the alignment while evaluation (and, if needed, treatment) takes place, as long as the find can be adequately protected in the judgment of the qualified staff. The City will be responsible for ensuring that the recommendations of the qualified staff regarding treatment and reporting are implemented.

### **Unique Geological Features**

All of the proposed repair Segments are located in urbanized areas. No unique geological features are present at or in close proximity to the project Segments or in the immediately surrounding vicinities. There would be No Impact on unique geological features, and no mitigation is required.

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VIII. GREENHOUSE GAS EMISSIONS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<i>Would the project:</i>				
(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Checklist Responses

### Background

Based on extensive technical studies, the Intergovernmental Panel on Climate Change (IPCC) has concluded that

[w]arming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millenia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased....It is *extremely likely* [95–100% probability] that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together (Intergovernmental Panel on Climate Change 2013).

Heat-trapping gases are referred to as GHGs, also called well-mixed long-lived GHGs. *Well-mixed* refers to the fact that atmospheric concentrations of these pollutants are temporally distributed around the globe—GHG concentrations are not as spatially variant as those of traditional air pollutants. *Long-lived* refers to the fact that

the pollutant concentrations remain in the atmosphere for decades, and therefore short-term reductions in emissions do not immediately lead to reductions in atmospheric concentrations.

Water vapor is the most significant heat-trapping gas, but its concentrations fluctuate depending on temperature, and water vapor does not accumulate in the atmosphere like the well-mixed long-lived GHGs. The GHG with the largest heat-trapping impacts is carbon dioxide (CO<sub>2</sub>), followed by methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).

Not all GHGs have an equivalent impact on climate. A variety of metrics have been tabulated to weight the impacts of the various GHGs relative to CO<sub>2</sub>—including global warming potential (GWP) and global temperature potential (GTP)—for time horizons ranging from 20 years to 500 years, and the values vary widely. For example, depending on the metric and time horizon, methane is anywhere between 4 and 86 times as important as CO<sub>2</sub> (Myhre et al. 2013). The IPCC has identified that “all choices of metric contain implicit value-related judgements such as type of effect considered and weighting effects over time” (Myhre et al. 2013). However, the prevailing policy has been to use GWPs for the 100-year time horizon. Specifically, to account for the combined impact of GHGs, emissions of each GHG are expressed in terms of *CO<sub>2</sub> equivalents* (CO<sub>2</sub>e) by multiplying by the appropriate GWP, and then summed. By definition, CO<sub>2</sub> has a GWP of 1. The 100-year GWPs for the other gases have changed slightly over time; for example, at the time of the 1990 Kyoto Protocol, the GWPs were 21 for CH<sub>4</sub> and 310 for N<sub>2</sub>O, but currently California’s GHG emission inventory (California Air Resources Board 2021) uses GWPs identified in the IPCC’s 4<sup>th</sup> Assessment Report, which are 25 for CH<sub>4</sub> and 298 for N<sub>2</sub>O (Forster et al. 2007).

In California, GHG emissions decreased from 2000 to 2019 (California Air Resources Board 2022). However, while climate change will affect some localities differently than others, the environmental impact in any location is primarily a function of global rather than local GHG levels, and global GHG concentrations have been consistently increasing for several decades (Hartmann et al. 2013).

### Potential to Generate Greenhouse Gas Emissions That May Have a Significant Impact

All fuel-burning equipment generates GHG emissions. However, construction activities are temporary rather than permanent. Accordingly, the BAAQMD’s *CEQA Guidelines* (Bay Area Air Quality Management District 2017) do not set quantitative significance criteria for GHG emissions from construction operations, and the BAAQMD has also identified that upcoming updates to its CEQA thresholds will not propose construction-related climate significance thresholds (Bay Area Air Quality Management District 2022).

That said, BAAQMD’s existing CEQA significance threshold for permanent-source GHG emissions—10,000 metric tonnes of CO<sub>2</sub>e per year—provides some context for evaluating the GHG emissions associated with the proposed projects. As detailed in Appendix A, the total GHG emissions associated with the proposed repair activities are estimated to be 84 metric tonnes of CO<sub>2</sub>e (Tamura Environmental 2022). This is substantially below the significance threshold of 10,000 metric tonnes of CO<sub>2</sub>e per year that BAAQMD has identified for *permanent* source operations. Moreover, work would be temporary and short-term; once completed, the projects would if anything reduce future GHG emissions, since they would reduce the need for future repairs. In this context, impacts related to GHG emissions are considered Less than Significant, and no mitigation is required.

### Potential to Conflict with an Applicable GHG Plan, Policy, or Regulation

GHG reduction plans, policies, and regulations apply at the international, federal, state, and local levels, as summarized below.

- Internationally, on January 20, 2021, President Biden accepted the 2015 Paris Agreement (see <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/paris-climate-agreement/>), which identifies a central aim to “strengthen global response to the threat of climate change”, including “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase even further to 1.5°C above pre-industrial levels” (United Nations 2015). This is a high-level agreement that operates on a national and industry-wide scale and was not intended to lay out specifics at the level of individual projects
- In California, in 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05, identifying a GHG emissions reduction target of 80% below 1990 levels by 2050. Subsequently, Governor Jerry Brown issued Executive Order B-30-15, establishing an interim statewide GHG emissions reduction target of 40% below 1990 levels by 2030 in order to meet the 2050 goal, and Senate Bill 32 (SB 32) went beyond identifying it as a target by adding Section 38566 to California’s Health and Safety Code, which requires CARB “to ensure that statewide greenhouse gas emissions are reduced by 40% below the 1990 level by 2030”. In 2018, Governor Brown signed Executive Order B-55-18, establishing a statewide goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter”
- At the regional level, as mentioned above, BAAQMD is in the process of updating its CEQA thresholds for GHGs
- At the local level, in June 2022 the City adopted an update to its Climate Action Plan (City of Santa Clara 2022) (see additional discussion in *Energy* section of this checklist)

None of the plans or regulations identified above calls out specifics at the level of individual small projects such as the proposed repairs. The proposed projects therefore would not conflict with any of these current or draft plans. There would be No Impact related to conflict with plans, policies, or regulations for GHG reduction at the federal, state, or local level, and no mitigation is required.

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IX. HAZARDS & HAZARDOUS MATERIALS	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<p><i>Would the project:</i></p> <p>(a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</p>	□	□	■ (construction)	■ (long term) (potential long-term Benefit )

<b>IX. HAZARDS &amp; HAZARDOUS MATERIALS</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (construction)	<input checked="" type="checkbox"/> (long term) (potential long-term Benefit)
(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/> (construction)	<input type="checkbox"/>	<input checked="" type="checkbox"/> (long term) (potential long-term Benefit)
(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Checklist Responses

#### Potential to Create Hazards Related to Transport, Use, or Disposal of Hazardous Materials

Repair work at all of the Segments would require the use of substances that qualify as hazardous materials as defined by the State of California (e.g., Health and Safety Code Section 25260), including vehicle and equipment fuels and lubricants as well as the materials required to restore roadway paving and striping. All such substances would be handled and disposed of in strict accordance with good construction practices, applicable federal and state regulations, and the City’s Standard Specifications. With adherence to the City’s Standard Specifications and good construction practices, impacts related to hazardous materials use and handling during construction are expected to be Less than Significant. No mitigation is required.

Once the repairs at each Segment have been completed, normal operations and maintenance would resume. Consequently, there would be no long-term increase in the use of substances that qualify as hazardous materials and No Impact related to increased hazard to the public or the environment due to routine transport, use, or disposal of hazardous materials. Rather, because the proposed repairs would decrease the need for ongoing maintenance by restoring the integrity of the project Segments, there would likely be a long-term Benefit with regard to the use and disposal of hazardous substances. No mitigation is required.

### Potential to Create Hazards Related to Hazardous Materials Releases

As discussed in the previous item, the proposed repairs would require the use of some hazardous materials—such as fuels, lubricants, and paving and striping materials—but all such substances would be handled according to good construction practices, applicable state regulations and the City’s Standard Specifications. With these precautions in place, impacts, if any, related to hazardous materials spills or releases during construction are expected to be Less than Significant. No mitigation is required.

Once the repairs at each Segment have been completed, normal operations and maintenance would resume, as discussed in the previous item. There would be no long-term increase in the use of substances that qualify as hazardous materials as a result of the proposed projects, and—as discussed above—would likely be a decrease due to the decreased need for maintenance of the project Segments. Consequently, there would be No Impact related to increased hazard to the public or the environment due to potential hazardous materials spills or releases and would likely be a long-term Benefit. No mitigation is required.

### Potential for Handling or Emission of Hazardous Substances or Waste within 0.25 Mile of a School

No public or private elementary, middle, or high schools are located within 0.25 mile of any of the project Segments, and no daycare or preschool facilities have been identified within 0.25 mile of any of the Segments. The closest facilities are

- Rainbow Montessori Daycare, located on Coleman Avenue about 0.34 mile southeast of Segment 100
- Santa Clara Unified School District’s Kathryn Hughes Elementary School, located on Calle de Escuela about 0.48 mile south-southeast of Segment 242

There would be No Impact related to emissions or handling of hazardous materials, substances, or waste within 0.25 mile of an existing school, and no mitigation is required.

### Potential to Create Hazards Related to Location on a Listed Hazardous Materials Site

As part of the initial environmental screening conducted for all of the repairs proposed under the Annual Sanitary Sewer Repairs 2021 Construction Package, the City screened for location on sites listed for hazardous materials contamination. Resources consulted included the State Water Resources Control Board’s GeoTracker online database (State Water Resources Control Board 2021) and the Department of Toxic Substances Control’s (DTSC’s) EnviroStor online database (Department of Toxic Substances Control 2021). Repair Segment locations were entered individually into the GeoTracker and EnviroStor mapping utilities, using a 1,000-foot search radius. The goal was to identify sites coinciding with repair Segments as well as nearby sites where contaminant migration might affect the site of a repair Segment.

None of the Segments screened was found to be located on an “open” site<sup>14</sup> listed for hazardous materials contamination, and the majority had no such sites within 1,000 feet (Redtail Consulting 2021). However, the Segments evaluated in this Initial Study—100, 231, 232, 233, and 242—are all within areas potentially affected by contaminant migration from nearby listed sites, as summarized in Table 3-7.<sup>15</sup> An additional open site, Lombardo Diamond Core Drilling, is located at 585 Roberts Avenue, about 300 feet northwest of the west terminus of Segment 100. Contaminants of concern at this site include zinc from former metal plating activities, and both soil and groundwater appear to have been affected. However, contamination appears not to extend offsite to adjacent properties (San Francisco Bay Regional Water Quality Control Board 1997, 2006), and this site is not discussed further.

**Table 3-7. Open Hazardous Materials Sites in Proximity to Repair Segments**

Segment	Site	
100	<b>California Paperboard Company</b> 525 Mathew Street	<b>Type:</b> Leaking Underground Storage Tank (LUST) Cleanup Site <b>Status:</b> <i>Open – Site Assessment</i> as of 09/12/2016 <b>Contaminants of Concern:</b> diesel, gasoline

**Site Overview**

The facility at 525 Mathew Street has been in operation since 1953. Originally the Royal Fiber Company, it was purchased in 1962 by the Georgia-Pacific Corporation, and then again in 1974 by the Newark Group, at which time its name was changed to the California Paperboard Company. The facility currently operates as a paper mill involved in the recovery and recycling of paper and the manufacture of paper products (AMEC 2013, Amec Foster Wheeler 2017).

Historical documents indicate that an underground gasoline storage tank (UST) located in the south portion of the facility near Mathew Street was filled with sand and abandoned in place in 1969 (AMEC 2013). In 1989, soil samples were collected at either end of an existing diesel UST, also located on the Mathew Street side of the facility, and elevated diesel concentrations were detected in both. The diesel UST was removed in 1992, and site characterization was initiated in 1989. Since that time, 24 soil borings have been conducted and eight groundwater monitoring wells have been installed (AMEC 2013, Amec Foster Wheeler 2017).

As of 1993, monitoring showed that diesel and modified gasoline had impacted shallow groundwater migrating toward Mathew Street (Dugan Associates 1993). Groundwater extraction and treatment using oxygen release compounds (ORCs) was performed between October 2001 and April 2003 but was discontinued when it was suspected that groundwater pumping was capturing hydrocarbons from an offsite source (AMEC 2013).

Evaluation in 2013 concluded that soil contamination was adequately delineated, and that it was confined to the immediate areas around the former UST locations, although its vertical extent was not known.

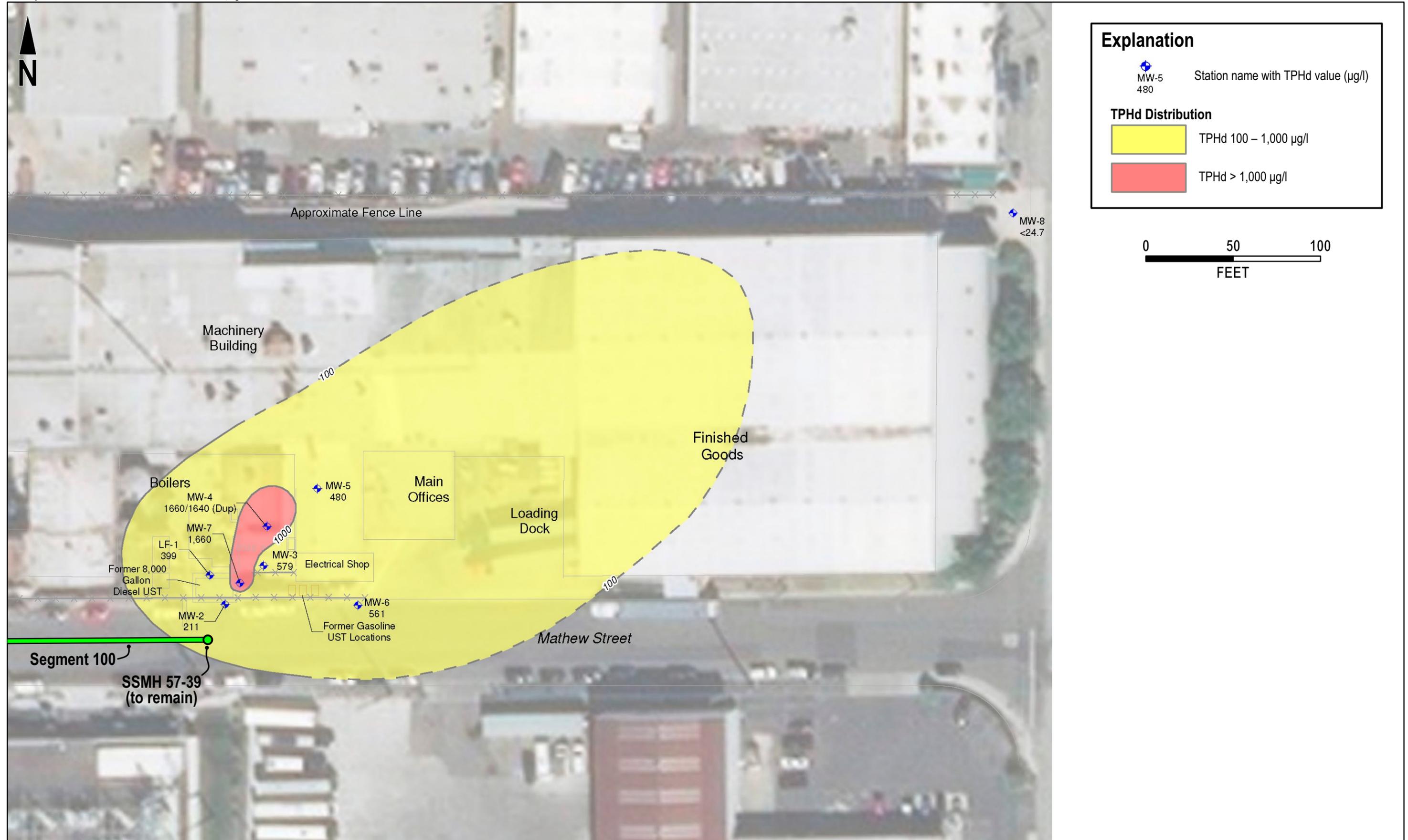
Groundwater contamination levels were also highest in the area around the former gasoline UST (AMEC 2013). Soil excavation and further ORC amendment of groundwater was recommended, with additional evaluation if clean-up goals were not reached in 2 years (AMEC 2013). This remediation approach was approved in 2013 (County of Santa Clara Department of Environmental Health 2013)

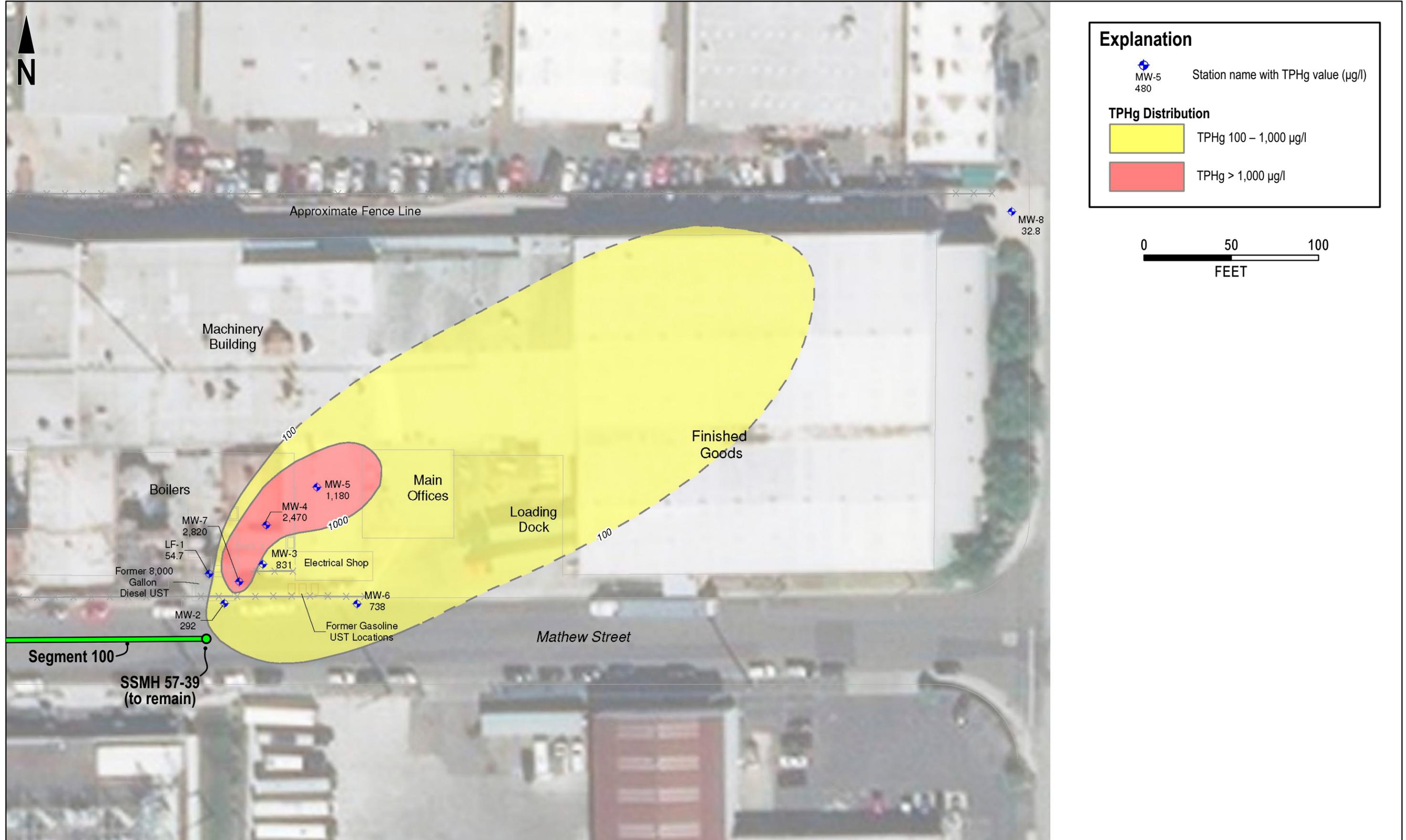
Tank removal and soil excavation were completed in 2014 (Amec Foster Wheeler 2014, 2017). Tank removal included three unregistered gasoline USTs, including the UST that had been closed and abandoned in 1969 (Wood Environment & Infrastructure Solutions 2018). Limited removal of contaminated soils was also conducted in conjunction with tank removal (Amec Foster Wheeler 2014). Backfill on the tank sites included ORC and bionutrients to address residual hydrocarbon-impacted soils. Soil and subslab vapor points were installed in 2015 – 2016. In 2017, additional ORC amendment of groundwater was proposed under a Path to Closure Plan aimed at meeting low threat closure criteria (Amec Foster Wheeler 2017). In 2020, a Work Plan

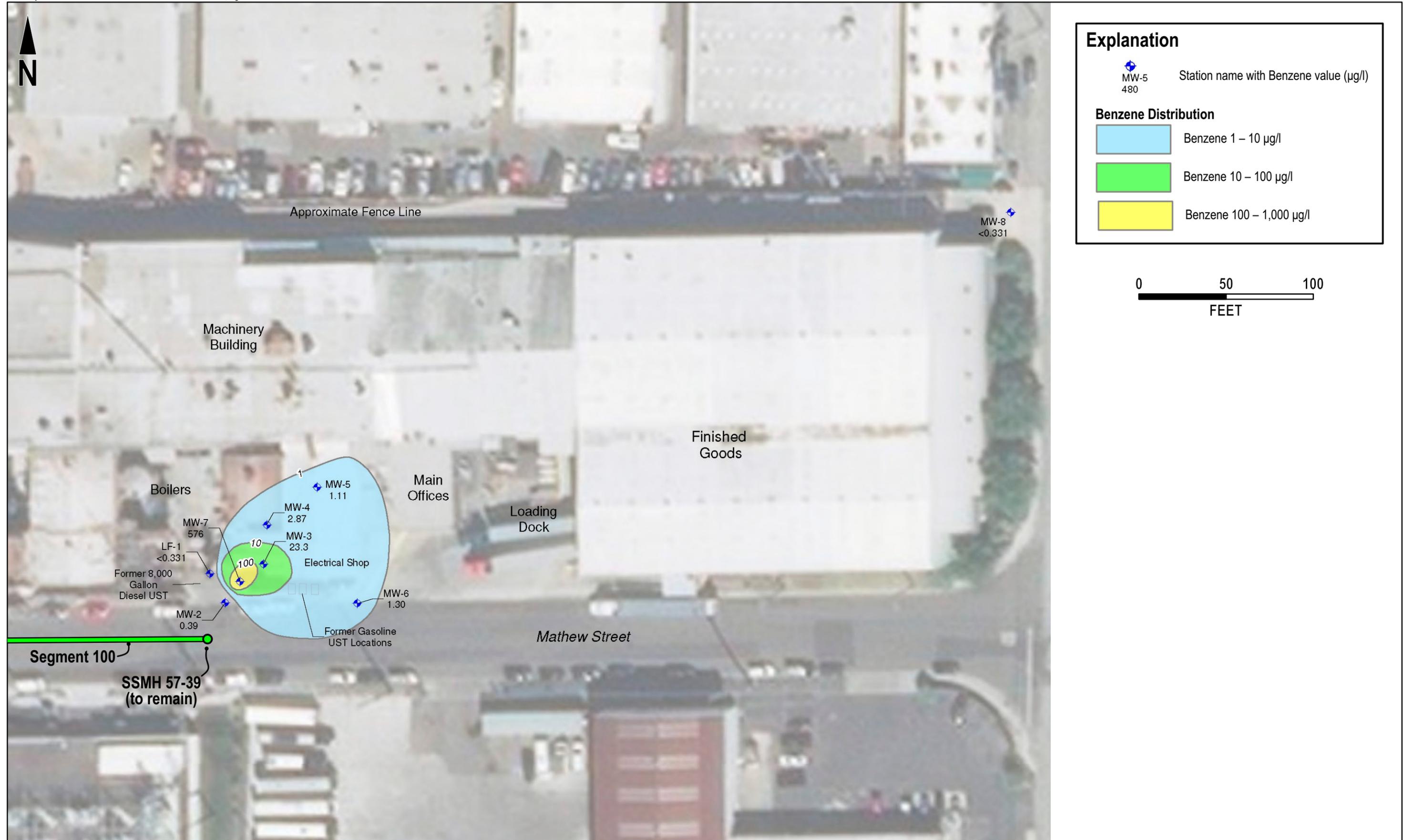
<sup>14</sup> I.e., a site that is not yet fully remediated and/or is subject to monitoring or other strictures.

<sup>15</sup> As discussed in more detail under *Scope of this Initial Study* in Section 1, location in proximity to sites with known hazardous materials contamination is the reason these five Segments were considered not to qualify for categorical exemption from CEQA, and thus the reason this Initial Study was prepared.

Segment	Site
231 – 233	<p>for groundwater plume definition was submitted, and GeoTracker (State Water Resources Control Board 2021) records indicate that monitoring was continuing as of 2021.</p> <p>As of 2018 (the most recent available data), a groundwater plume with TPHg and TPHd (total petroleum hydrocarbons as gasoline and diesel, respectively) as well as benzene exceeding the RWQCB’s relevant Environmental Screening Levels (ESLs) was documented as extending beneath Mathew Street in proximity to the former tank sites (Wood Environment &amp; Infrastructure Solutions 2018) (see Figures 7, 8, 9).</p> <p><b>Santa Clara Gateway</b>                      Great America Way (Yerba Buena Parkway) &amp; Lafayette Street</p> <p><b>Site type:</b> Department of Toxic Substances Control (DTSC) Voluntary Cleanup Site</p> <p><b>Status:</b> cleanup completed, <i>Certified / Operation &amp; Maintenance</i> as of 11/26/2003</p> <p><b>Contaminants of concern:</b> polynuclear aromatic hydrocarbons (PAHs), motor oil, diesel, gasoline</p> <p><b>Site Overview</b>                      A portion of the Santa Clara Gateway site is thought to have been developed for industrial use—first as a charcoal factory and later as a boxing facility—in the 1950s. Industrial activities appear to have continued on this portion of the site through the 1970s, based on historic aerial photographs. The footprint of the former Santa Clara All Purpose Landfill later expanded to cover part of the site’s industrial area. The remainder of the site, which consisted of historic marshlands, was not involved in industrial uses (Lowney Associates 2001). As of the early 2000s, the landfill had been closed and was in compliance monitoring (Lowney Associates 2001). It was subsequently redeveloped with uses including the Santa Clara Golf &amp; Tennis Club course (closed as of October 2019) and the PAL BMX Track, both of which are slated for further redevelopment under the Related (formerly City Place) mixed-use development planned for the next few years. The Landfill is discussed further in text below.</p> <p>The Remedial Investigation/Feasibility Study for the Santa Clara Gateway site documented elevated PAH levels in layers of black carbonaceous soil material thought to be a remnant of former charcoal manufacturing activities. Elevated levels of petroleum hydrocarbons were also detected elsewhere in site soils (Lowney Associates 2001). The groundwater quality investigation conducted as part of initial site screening indicated that groundwater “generally has not been impacted” (Lowney Associates 2001).</p> <p>Remedial action was conducted in 2001 – 2002 and included onsite consolidation and capping of PAH-contaminated soil and offsite disposal of petroleum hydrocarbon–contaminated soil (Department of Toxic Substances Control 2003). The site has now been redeveloped in office park / R&amp;D uses, with precautionary deed restrictions and land use prohibitions in place (see <a href="https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=43290008">https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=43290008</a>). Yearly site inspections continue to be required (Department of Toxic Substances Control 2003).</p> <p>No information on the offsite extent of contamination, if any, is readily available. However, based on Lowney and Associates’ (2001) description of the former landfill encroaching over a portion of the site’s former industrial area, the industrial area appears to have extended beyond the limits of the site remediated, so contamination could be present in adjacent areas.</p>
242	<p><b>SummerHill Homes</b>                      2343 Calle Del Mundo</p> <p><b>Site type:</b> Cleanup Program Site</p> <p><b>Status:</b> <i>Open – Site Assessment</i> as of 08/10/2020</p> <p><b>Contaminant of concern:</b> trichloroethylene (TCE), other volatile chemicals</p> <p><b>Site Overview</b>                      This site is currently planned for residential redevelopment. Demolition of existing buildings onsite was planned for 2020 (Arcadis 2020) and was completed in 2021 along with grading for development (Arcadis 2022).</p> <p>The site was developed with the former light industrial structures in 1979 – 1981 and was in technology, manufacturing, and commercial use until very recently. It was subject to a historical chemical release that was investigated and remediated under RWQCB oversight between 1988 and 1997. The RWQCB issued a No Further Action letter in 1997. However, residual contamination was identified as present at the site, necessitating preparation of a Site Management Plan and Health and Safety Plan (Arcadis 2020) as an</p>







**Segment Site**

outcome of the CEQA process for site redevelopment. It is unclear whether all contamination on the site can be attributed to onsite uses (e.g., E<sub>2</sub>C, Inc. 1996, Langan 2017).

As of 2020, residual contamination apparently affected soil and groundwater, and soil vapor was present (Arcadis 2020). Sampling conducted at the site in 2018 included soil sampling and soil vapor assessment. All samples were collected within the boundaries of the site (see Arcadis 2020, Figure 2 and appended materials), a minimum of about 800 feet south-southeast of the south terminus of Segment 242. Analysis of soil samples showed all contaminants below the RWQCB's 2019 residential and construction worker direct contact ESLs or background concentration ranges, as applicable. However, soil vapor levels exceeded relevant ESLs for TCE, vinyl chloride, chloroform, benzene, cis-1,2-dichloroethylene (cis-1,2-DCE), and naphthalene in several tested locations, and groundwater grab samples collected in a prior (2014) study exceeded relevant ESLs for cis-1,2-DCE, TCE, and 1,1,2-trichloroethane (1,1,2-TCA). Groundwater levels at the time of sampling were thought to indicate localized southeasterly flow, but regional groundwater movement is generally northward, toward San Francisco Bay (Langan 2017, Arcadis 2020).

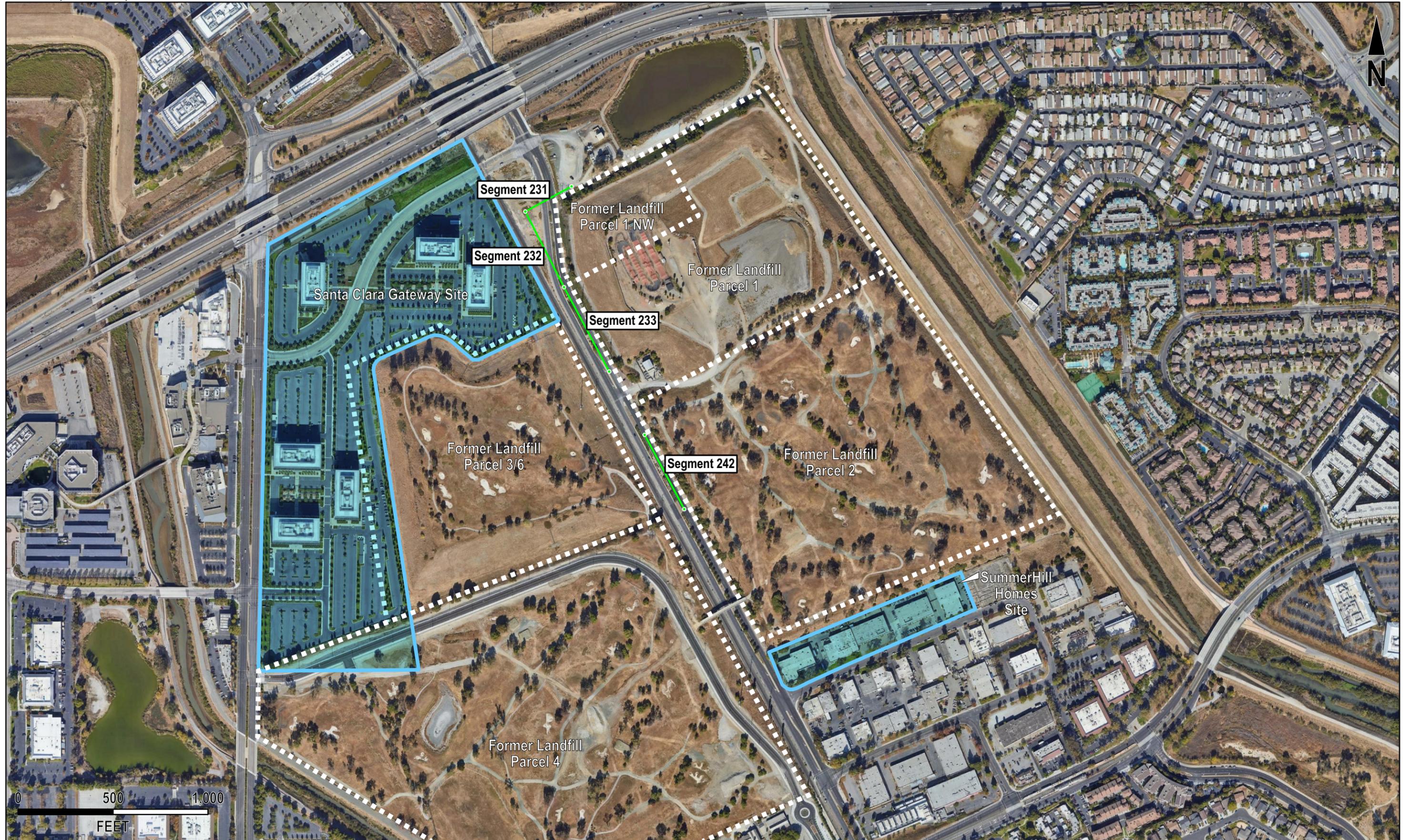
No information on the offsite extent of contamination, if any, is readily available.

*Sources: State Water Resources Control Board 2021, Department of Toxic Substances Control 2021, additional sources in text*

Segments 231 – 233 and 242 are also in close proximity to the footprint of the former Santa Clara All Purpose Landfill, although historic aerial photographs indicate that what is now the Lafayette Street ROW was outside the landfill cells (Figure 10) (City of Santa Clara 2015, Figure 2-3; GoogleEarth 2022). The Eastside Retention Basin complex, including the parking lot area where Segment 231 has its east terminus, was also outside the active landfill cells (City of Santa Clara 2015, Figure 3.11-1).

The Santa Clara All Purpose Landfill began operations in the late 1960s, and reportedly accepted non-hazardous residential, commercial, industrial, and municipal waste and construction debris until its closure in 1993. It is equipped with a leachate collection system that continues to discharge to the City's sanitary sewer network (City of Santa Clara 2015). It also has a landfill gas removal system that collects landfill gas and transfers it to a cogeneration facility, which is located off Lafayette Street southwest of the PAL BMX Track and is operated by Ameresco (Staub and Bakas 2011; location shown in Figure 2 and Figure 10). Landfill closure took place under the auspices of a Closure Plan and Post-Closure Maintenance Plan (PCMP) originally adopted in 1992 and amended several times since then, most recently in 2013. As part of the closure process, the landfill was capped with a low-permeability clay layer to minimize groundwater infiltration and reduce leachate production, and to provide further control on landfill gas emissions (City of Santa Clara 2015).

Water quality is monitored twice a year at 19 monitoring wells and three piezometers located along the perimeters of the former landfill parcels. All three piezometers and 16 of the monitoring wells are screened in a shallow sand layer that ranges up to 25 feet below the pre-landfill ground surface; the remaining three wells are screened in a deeper horizon that is generally about 40 feet below the pre-landfill ground surface. Groundwater samples have historically shown concentrations of 1,1-dichloroethene (DCE), cis-1,2-DCE, trans-1,2-DCE, TCE, and vinyl chloride exceeding the RWQCB's ESLs for potential drinking water resources, the residential vapor intrusion ESLs, and/or the commercial/industrial vapor intrusion ESLs. Historic exceedances since 1988 have primarily been limited to the northeastern portion of former Landfill Parcel 4 and southeastern portion of Parcel 3; groundwater to the northeast, beneath former Parcel 1, Parcel 2, and the Eastside Retention Basin facility, is generally not impacted (City of Santa Clara 2015) (see Figure 10 for locations relative to proposed repair Segments). Additional groundwater studies conducted in 2014 during the planning of the Related (City Place) redevelopment program analyzed samples from 12 temporary borings advanced on former Parcel 4 (Figure 10); concentrations of TPHg, TPHd, total petroleum hydrocarbons as motor oil (TPHmo), benzene, t-butyl alcohol, naphthalene, cis-1,2-DCE, TCE, and vinyl chloride were all above groundwater ESLs for potential drinking water resources.



## Segment 100

As Figure 7 shows, the east terminus of Segment 100 is within the 2018-documented extent of the diesel plume associated with the 525 Mathew Street site. It is just outside the area where groundwater was known to be contaminated with gasoline as of 2018 (Figure 8), and about 25 feet from the 2018 limits of groundwater benzene contamination (Figure 9).

Based on groundwater monitoring conducted at the 525 Mathew Street site in 2018, depth to groundwater is variable but generally ranges from about 4.8 to as much as 12 or 15 feet (Wood Environment & Infrastructure 2018), apparently depending on time of year and annual rainfall conditions. Depth to groundwater beneath Segment 100, which is less than 50 feet from the closest groundwater monitoring wells, is presumed to be similar. Excavation for sewer pipe replacement at Segment 100 is expected to be up to about 8 – 10 feet deep, and thus is considered likely to encounter groundwater contaminated with diesel. Gasoline and benzene contamination is also possible.

As noted in Table 3-7, limited removal of contaminated soils was conducted when the former USTs were removed in 2014. However, excavation did not extend into the City ROW (Amec Foster Wheeler 2014). Consequently, there is some potential that soil contamination extends beneath Mathew Street, and excavation along Segment 100 could also encounter soils contaminated by diesel, gasoline, benzene, and other compounds associated with petroleum hydrocarbons. Soil vapor with elevated contaminant levels may also be a concern. Additionally, typical of sewer repairs in general, there may be some potential for exposure to sewer gases such as methane, carbon dioxide, hydrogen sulfide, and ammonia.

Accordingly, excavation for repairs at Segment 100, and particularly at the easternmost end of the Segment, is considered to have potential to expose workers and the public to elevated levels of diesel, gasoline, and benzene as well as sewer gases. Discharge of contaminated groundwater and improper handling of contaminated soils, if any, could also result in further spread of contamination, with adverse consequences for the environment and public health. Due to the short duration of work, worker exposure would be limited, and the limited extent of the excavation would reduce overall environmental and public health risks, but impacts are nonetheless considered potentially Significant. To address these concerns, the City will implement the following mitigation measure. With this measure incorporated, risks would be addressed consistent with current best practices and prevailing regulatory standards, and residual impacts, if any, are expected to be Less than Significant. No additional mitigation is required.

### **Mitigation Measure HAZ-1. Contaminated Groundwater, Soil, and Soil Vapor Protection**

The contractor will be required to prepare and submit a Health and Safety Plan (HASP) for worker and public safety during all phases of sewer and manhole repair work. The HASP will be tailored to the contaminants potentially present, the media potentially affected/involved (soil, groundwater, soil vapor), and the activities planned. The HASP will be subject to review and approval by a Certified Industrial Hygienist and the City, and at a minimum will include the following requirements.

- Contractor staff will be required to wear appropriate Personal Protective Equipment (PPEs) and the contractor will be required to employ Best Management Practices (BMPs) to minimize and monitor human exposure to potential contaminants, consistent with applicable federal and state requirements, including Title 29 of the Code of Federal Regulations and California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) guidelines (California Code of Regulations, Title 8). Construction BMPs described in the HASP will include, but will not necessarily be limited to, the following

- Public access to the active work site will be prohibited using appropriate safety barriers and signage
- If contaminated soil, groundwater, or other materials encountered during construction activities qualify as hazardous waste (per California Code of Regulations, Title 22), all contractor employees (and subcontractors, if any) handling the hazardous waste will be certified in OSHA's 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training
- If dewatering is required, groundwater removed from excavations will be stored in a settling tank and tested onsite for contamination prior to discharge in accordance with applicable permit requirements. If contaminant levels are detected in excess of the applicable discharge limits per the contractor's discharge permit, the groundwater will either be treated onsite using appropriate technology (e.g., sediment filter, activated carbon filter, or other appropriate alternative methods) prior to discharge to the sanitary sewer, or will be removed from the site for appropriate offsite disposal. Groundwater treatment and offsite disposal options will be described in the HASP
- Contractor will stockpile excavated materials prior to onsite reuse as backfill or offsite disposal at an appropriately permitted landfill. Contractor will water/mist soil as it is being excavated. Stockpiled soil will be placed in areas shielded to the extent feasible from prevailing winds and will be covered with plastic sheeting to prevent fugitive dust and vapor emissions and to shield the stockpile from potential rain. Stockpiles will be placed away from drainage courses, gutters, and stormdrain inlets to prevent contact with stormwater runoff. Public access to the stockpile area(s) will be prohibited using appropriate barriers and signage. Soil exhibiting signs of potential contamination (such as staining, odors, or the presence of debris) will be placed in a separate stockpile
- Soil that does not exhibit signs of potential contamination may be reused as backfill in the excavation from which it was removed
- Excavated materials that exhibit signs of potential contamination, and excavated materials that are planned for offsite disposal at a landfill (if any), will be tested for contaminants in accordance with the receiving landfill's requirements and the U.S. Environmental Protection Agency's (EPA's) SW-846 guidelines (available: <https://www.epa.gov/hw-sw846>)
- If testing of excavated materials indicates any contaminant levels in excess of hazardous waste thresholds (per California Code of Regulations, Title 22), excavated materials will be handled and disposed of by a licensed hazardous waste disposal contractor and transported by a licensed hazardous waste hauler to an appropriately licensed and permitted disposal facility, in accordance with local, state, and federal requirements. Contractor will water/mist soil as it is being loaded onto haul trucks to prevent fugitive dust generation, and haul trucks will be covered and the truck wheels and body brushed clean to control trackout, fugitive dust, and vapor emissions during transport
- If import fill materials (e.g., soil, sand, aggregate base) are used, they will be sourced and tested in accordance with guidance from the California Department of Toxic Substances Control's Information Advisory *Clean Imported Fill Material* (available: <https://dtsc.ca.gov/information-advisory-clean-imported-fill-material-fact-sheet/>). Fill material testing results will be provided to the City for review and approval prior to importing the fill

materials to the project site. No fill material will be imported for use at any of the repair Segments if it contains any contaminant at a level exceeding hazardous waste thresholds (per California Code of Regulations, Title 22) or the applicable Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) for commercial/industrial land use, with the exception of arsenic for which the naturally occurring background level of 11 milligrams per kilogram (mg/kg) (per Duvergé 2011) will apply as a limiting threshold

- The contractor will monitor ambient air in the trench and around the perimeter of the active work area for fugitive vapor emissions, including volatile organic compounds (VOCs), methane, and other sewer/landfill gases, using appropriate field screening instrumentation. If any contaminant level in excess of applicable Cal/OSHA Permissible Exposure Levels is detected, worker PPEs will be required to include inhalation protection meeting Cal/OSHA standards, and/or work will be suspended until airborne concentrations decrease below the action threshold, as verified by ambient air monitoring. If air monitoring indicates the presence of flammable vapors in excess of their lower explosive limits (LELs) or other hazardous atmosphere conditions (e.g., oxygen-deficient atmosphere) work will be suspended until the hazardous atmosphere conditions have been mitigated as verified by air monitoring. Vapor control measures (e.g., spraying water or vapor suppressants, covering exposed soil with plastic sheeting, and ventilation of excavations and manholes) will be performed as necessary based on air monitoring results, to maintain vapor concentrations below PELs and LELs and ensure that safe oxygen levels (20.8% – 21%) are present in the trench and surrounding work area

The project Contract Documents will stipulate contractor responsibilities in implementing these requirements.

Once construction is complete, there would be no further need for excavation that could result in worker, public, or environmental exposure to existing contamination in the vicinity of Segment 100. Over the long term, there would thus be No Impact related to location in the vicinity of a listed hazardous materials site, and would likely be a Benefit since the proposed repairs would decrease the foreseeable need for additional work along Segment 100. No mitigation is required.

### Segments 231 – 233 & 242

As shown in Figure 10, Segments 231 – 233 are adjacent to the Santa Clara Gateway site at Yerba Buena Way and Lafayette Street, and Segment 242 is a little over 800 feet from the closest margin of the SummerHill Homes Site on Calle Del Mundo. These Segments are also all in close proximity to former waste disposal cells of the Santa Clara All Purpose Landfill, which underwent closure in 1993.

As noted in Table 3-7, contamination associated with the Santa Clara Gateway site appears to be limited to soil; groundwater does not appear to be affected (Lowney Associates 2001). Residual contamination associated with the SummerHill Homes site could involve both soil and groundwater, and soil vapor is also present (see discussion in Table 3-7).

No information on the offsite extent of contamination associated with either site is available, as Table 3-7 identifies, although it appears that the landfill covered a portion of the Santa Clara Gateway site's former industrial area (Lowney Associates 2001), so it is possible that the site originally extended beyond the limits of remediation, and contamination could be present in adjacent areas.

Contamination associated with former landfill uses is also possible, although the potential is reduced by the locations of the Segments (outside the former waste disposal cells, and therefore unlikely to encounter waste or leachate directly), the fact that the landfill is thought to have received only non-hazardous materials (City of Santa Clara 2015), and the leachate and gas collection systems in place. Nonetheless, since the overall direction of groundwater movement is to the north-northeast, and groundwater exceeding ESLs for multiple contaminants has been documented at former Landfill Parcel 4 (City of Santa Clara 2015; see above), there may also be some potential to encounter contaminated shallow groundwater related to former landfill uses along Segments 231 – 233 and 242. Additionally, although the former landfill is equipped with a landfill gas removal system, there may be some potential for presence of landfill and sewer gases such as methane, carbon dioxide, hydrogen sulfide, and ammonia.

Because the presence of residual contamination at the locations of Segments 231 – 233 and 242 cannot be ruled out, there may be some potential for exposure of workers and the public to contaminants including during repair work at all of these Segments. There may also be some potential for exposure to landfill and sewer gases. At worst, impacts are conservatively considered to have the potential to rise to a Significant level. The City will accordingly require implementation of Mitigation Measure HAZ-1 (*Contaminated Groundwater, Soil, and Soil Vapor Protection*) at Segments 231, 232, 233, and 242 as well as at Segment 100. With this measure incorporated, risks would be addressed consistent with current best practices and prevailing regulatory standards, and residual impacts are expected to be Less than Significant. No additional mitigation is required.

As discussed above for Segment 100, once construction at Segments 231 – 233 and 242 is complete, there would be no further need for excavation that could result in worker, public, or environmental exposure to existing contamination. Over the long term, there would thus be No Impact related to location in the vicinity of a listed hazardous materials site, and would likely be a Benefit since the proposed repairs would decrease the foreseeable need for additional work along these Segments. No mitigation is required.

### Potential for Hazards Related to Public and Public-Use Airports

Airport land use plans serve to coordinate local jurisdiction land use planning and airport operations to protect public welfare; goals of the San José International Airport (SJC) airport land use plan in particular include ensuring that “people and facilities are not concentrated in areas susceptible to aircraft accidents, and ... that no structures ... adversely affect navigable airspace” (Santa Clara County Airport Land Use Commission 2011). Airport land use plans typically define *Airport Environs* or an *Airport Influence Area* within which land use planning takes airport operations into account, and, closer to the runways, *Airport Safety Zones*, where stricter density and use limitations are applied, to minimize the number of persons potentially exposed to risks associated with aircraft accidents.

All of the project Segments are within the Airport Environs established in the SJC Comprehensive Land Use Plan, but outside the Airport Safety Zones (Santa Clara County Airport Land Use Commission 2011). Project construction would thus have no potential to affect airfield operations or safety, and with all of the project Segments located outside the defined Airport Safety Zones, construction workers are not considered to be at elevated risk as a result of airport incidents.

Once construction is completed, routine operations and maintenance would resume. The project would not install new above-grade facilities and would likely decrease the level of maintenance activity at the project Segments, as discussed in previous items above. Moreover, as identified above, all project Segments are outside the SJC Airport Safety Zones. The proposed repairs would therefore have no potential to affect long-term safety or operations at SJC, nor would they result in long-term risks to City workers.

There would be No Impact related to safety hazards associated with public or public-use airports during the construction period or over the long term. No mitigation is required.

### Potential to Interfere with an Emergency Response or Evacuation Plan

The City's Standard Specifications prohibit contractors from impeding the use of roadways, walkways, and other facilities that convey vehicle and pedestrian traffic without providing for safe temporary detours approved by the City. To that end, contractors are required to develop a Traffic Control and Detour Plan that, among other provisions, identifies lane closures and No Parking areas, if any; provides detours as necessary; and provides for ingress/egress to adjacent properties. With this requirement in place, the proposed repairs are not expected to impair implementation of or physically interfere with any adopted emergency response plan or emergency evacuation plan. Similar requirements govern operations- and maintenance activity by City workers. There would be No Impact with regard to interference with emergency response or evacuation, either during the construction period or over the long term. No mitigation is required.

### Potential for Exposure to Wildland Fire Hazards

All of the project Segments are located in urbanized areas surrounded by developed land uses. Segment 100 in particular is in a densely developed heavy industrial area. Segments 231 – 233 and 242 are adjacent to extensive open areas at the City's Eastside Retention Basin facility, the Santa Clara PAL BMX Track, and the former Santa Clara Golf & Tennis Club. However, as developed uses these are not considered wildlands.<sup>16</sup> Moreover, as discussed in the *Population & Housing* section of this checklist below, the proposed repairs would not increase system capacity and thus would have no potential to foster additional development in their vicinity; as a result, they would have no potential to increase exposure of persons or structures to fire hazards of any kind. There would be No Impact related to the potential for elevated exposure to wildland fire hazards. No mitigation is required.

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<sup>16</sup> The National Wildfire Coordinating Group (*n.d.*) defines wildlands as areas "in which development is essentially nonexistent, except for roads, railroads, powerlines, and similar transportation facilities" and where structures, if any, are widely scattered. Clearly, this does not apply to the Lafayette Street Segments, which are surrounded by developed land uses where open areas have been subject to regular oversight and management, including mowing and other landscape maintenance.

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<b>X. HYDROLOGY &amp; WATER QUALITY</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (construction)	<input checked="" type="checkbox"/> (long-term) (potential long-term Benefit)
(b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management in the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (potential long-term Benefit)
(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 that would:				
(i) result in substantial erosion or siltation on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (construction)	<input checked="" type="checkbox"/> (long term)
(ii) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (potential long-term Benefit, pollutant sources)
(iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (potential long-term Benefit for seiche-related risk, Segments 231 – 233, 242)
(e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (potential long-term Benefit for WQCP) <sup>a</sup>

<sup>a</sup>WQCP = Water Quality Control Plan (Basin Plan)

## Discussion of Checklist Responses

### Potential to Degrade Water Quality

#### Violation of Water Quality Standards and Waste Discharge Requirements

Ground disturbance required for project construction would have some potential to degrade water quality through accelerated erosion and delivery of sediment to overland runoff and storm drains, and also as a result of accidental release or discharge of various pollutants such as vehicle and equipment fuels and lubricants, resins, grout, curing media, and paving and striping media. However, the City's Standard Specifications include required measures for water quality protection. With these requirements in place, the potential for the proposed repairs to result in violation of water quality standards or waste discharge requirements is expected to be Less than Significant. No mitigation is required.

Once repairs are complete, routine operations and maintenance would resume, with a likely reduction in maintenance frequency due to the improved condition of the project Segments. There would be no potential to increase the risk of violating water quality standards or waste discharge requirements. Rather, by restoring the integrity and improving the function of the project Segments, the proposed repairs would reduce the need for maintenance and decrease the potential for sanitary sewer system leaks, spills, and overflows. There would be No Impact but instead a long-term Benefit in terms of decreased potential for violation of water quality standards and waste discharge requirements. No mitigation is required.

#### Other Substantial Degradation of Water Quality

As discussed above, ground disturbance during construction would have some potential to degrade water quality through accelerated erosion and delivery of sediment to overland runoff and storm drains. Accidental releases or discharges of pollutants such as vehicle and equipment fuels and lubricants, resins, grout, curing media, and paving and striping media are also possible during construction. However, the City's Standard Specifications require implementation of measures to control runoff and protect water quality. With these controls in place, the potential for project construction to degrade water quality is considered Less than Significant. No mitigation is required.

Once repairs are complete, routine operations and maintenance would resume, and because of the anticipated lifespan of the repairs, the need for maintenance intervention would be reduced for the foreseeable future. With no alteration in operations-related activities, and an overall reduction in the need for maintenance, there would be no potential to increase the potential for water quality degradation. Over the long term, there would be No Impact, and likely a long-term Benefit, with regard to the potential for water quality degradation. No mitigation is required.

### Potential to Impede Sustainable Groundwater Management

The proposed repairs would not increase consumption of groundwater nor would they add new areas of impervious surface that could impede groundwater recharge. As a result, they would have no potential to impede or interfere with sustainable groundwater management in the Santa Clara Valley. There would be No Impact, and no mitigation is required.

### Potential to Alter Existing Drainage Patterns

#### Increased Erosion or Siltation

As discussed above, ground disturbance during construction would have some potential to accelerate localized soil erosion and offsite delivery of sediment, but the project would be required to implement erosion and sediment control measures per the City's Standard Specifications. With these measures in place the projects'

potential to result in impacts related to increased erosion and siltation during construction would be Less than Significant. No mitigation is required.

The proposed repairs would involve existing facilities, and no new above-grade facilities would be installed. As a result, the proposed projects would not modify existing site or regional drainage patterns. All surfaces disturbed for manhole rehabilitation would be restored in kind once the rehabilitation is completed. Consequently, over the long term there would be No Impact with regard to modification of drainage patterns that could lead to increased erosion and siltation.

#### Increased Runoff Leading to Flooding

As described in the previous item, the proposed repairs would not modify existing drainage patterns at any of the project Segments, and no new areas of impervious surface would be created. The repairs thus have no potential to increase site runoff at any of the project Segments. There would be No Impact related to increased runoff or exacerbation of flood hazards on- or offsite. No mitigation is required.

#### Exceedance of Stormwater Drainage Capacity

As described in the previous items, the proposed repairs would not modify existing drainage patterns nor would they entail creation of any new areas of impervious surface. As a result, stormwater runoff would not increase at any of the project Segments, and there would be no potential for the repairs to create or contribute to exceedance of stormwater drainage capacity. There would be No Impact related to exceedance of stormwater drainage capacity, and no mitigation is required.

#### New Sources of Polluted Runoff

The proposed repairs would not create new areas of impervious surface, and therefore would not increase runoff at any of the project Segments. Once the repairs are completed, the City's routine operations and maintenance program would resume, with a likely decrease in maintenance frequency due to the improved condition of the project Segments; there would thus be no increase in the potential for pollutant releases or spills. Rather, by restoring the integrity of existing sanitary sewer infrastructure, the project would result in a long-term benefit by reducing the potential for sewer system leaks, spills, and overflows. There would be No Impact but, rather, a long-term Benefit with regard to generation of polluted runoff. No mitigation is required.

#### Impedance or Redirection of Floodflows

No new above-grade facilities would be installed at any of the project Segments. The proposed repairs would thus have no potential to result in impedance or redirection of floodflows. There would be No Impact, and no mitigation is required.

#### Potential for Release of Pollutants Due to Flood, Tsunami, or Seiche Inundation

Because of their locations on nearly flat topography at a substantial distance from the range fronts bordering the Santa Clara Valley, the project Segments are not considered at risk from mudflows. No Impact is anticipated with regard to increased potential for pollutant releases due to mudflow inundation. No mitigation is required.

All of the project Segments are outside the area of potential tsunami inundation as delineated by the California Geological Survey (2019). They are therefore not considered subject to tsunami hazards. No Impact is anticipated with regard to increased potential for pollutant releases due to tsunami inundation, and no mitigation is required.

The California Geological Survey does not publish seiche hazard maps, but the Environmental Impact Report prepared for the City's current General Plan (City of Santa Clara 2011) identifies the potential for localized seiche hazards associated with enclosed water bodies such as ponds and reservoirs within the City.

Segment 100 is located at a substantial distance from enclosed water bodies and is not considered subject to seiche hazards. No Impact is anticipated at Segment 100 with regard to increased potential for pollutant releases due to seiche inundation. No mitigation is required.

Segments 231 – 233 and Segment 242 are located in proximity to the City's Eastside Retention Basin, which has been identified as potentially subject to seiche (City of Santa Clara 2011). All of these Segments are considered at potential risk of seiche inundation, particularly Segments 231 and 232, which are located closest to the Retention Basin. However, as previous items note, the proposed repairs at Segments 231 – 233 and 242 would not add new above-grade facilities, and they would substantially improve the integrity of existing sewer infrastructure at this location. Consequently, there would be No Impact with regard to increased potential for pollutant releases due to seiche inundation. If anything, by improving sewer pipeline and manhole integrity, repairs at these Segments would decrease the likelihood of damage resulting in sewage releases as a result of seiche inundation. This would represent a Beneficial Impact. No mitigation is required.

### Potential to Conflict with or Obstruct a Water Quality Control or Groundwater Management Plan Water Quality Control Plan

The RWQCB oversees water quality in the project region, pursuant to California's Porter-Cologne Water Quality Control Act and the federal Clean Water Act. The guiding document is the San Francisco Bay Basin Water Quality Control Plan (Basin Plan) (San Francisco Bay Regional Water Quality Control Board 2019).

As discussed above, ground disturbance during construction would have some potential to degrade water quality through accelerated erosion and delivery of sediment to overland runoff and storm drains. Accidental releases or discharges of pollutants such as vehicle and equipment fuels and lubricants, resins, grout, curing media, and paving and striping media are also possible during construction. However, the City's Standard Specifications require implementation of measures to control runoff and protect water quality. The proposed repairs therefore would not conflict with or obstruct implementation of the Basin Plan during construction. There would be No Impact during construction, and no mitigation is required.

Once repairs are complete, routine operations and maintenance would resume, with a likely decrease in maintenance frequency due to the improved condition of the project Segments. With no increase in operations- and maintenance-related activities, there would be no potential to increase the risk of water quality degradation. On the contrary, the proposed repairs would reduce the potential for sanitary sewer system leaks, spills, and overflows. This is consistent with and supportive of Basin Plan goals. Over the long term, there would be No Impact but instead a Benefit with regard to implementation of the Basin Plan. No mitigation is required.

### Groundwater Management Plan

As the local Groundwater Sustainability Agency, Valley Water—formerly the Santa Clara Valley Water District—manages groundwater in Santa Clara County under their current Groundwater Management Plan (Valley Water 2021). However, as identified above, the proposed repairs would not increase consumption of groundwater nor would they add new areas of impervious surface that could impede groundwater recharge. As a result, they would have no potential to conflict with or impede implementation of the Groundwater Management Plan. There would be No Impact, and no mitigation is required.

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<b>XI. LAND USE &amp; PLANNING</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<i>Would the project:</i>				
(a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Checklist Responses

### Potential to Physically Divide an Established Community

The proposed projects would involve repairs to existing sanitary sewer infrastructure, including sewer pipes and manholes. No new above-grade appurtenances of any kind would be constructed. As such, the projects have no potential to create physical barriers or separations that could divide the communities surrounding the project Segments. There would be No Impact related to division of an existing community, and no mitigation is required.

### Potential to Conflict with Land Use Plans, Policies, or Regulations Adopted to Reduce Environmental Impacts

Land use planning in the City is guided by the City’s current General Plan (City of Santa Clara 2014) and various specific plans, and is regulated through the Zoning Ordinance and building permit process. The proposed projects would entail needed repairs to sanitary sewer infrastructure that serves existing development. As such, they are considered consistent with the City’s prevailing land use plans and the Zoning Ordinance.

Other relevant land use planning documents include the Comprehensive Land Use Plan for Norman Y. Mineta San José International Airport (SJC) (Santa Clara County Airport Land Use Commission 2011) and the Santa

Clara Valley Habitat Plan (County of Santa Clara et al. 2012). As discussed in the *Hazards & Hazardous Materials* section of this checklist, all of the project Segments are within the Airport Environs established in the SJC Comprehensive Land Use Plan (Santa Clara County Airport Land Use Commission 2011). However, the proposed work would involve repairs to existing sanitary sewer infrastructure and would have no potential to independently modify the City’s existing or planned land use mosaic; changes in land use planning require amendment(s) to the governing plan document(s). Additionally, since the proposed work would involve repairs to existing sewer infrastructure, and no new above-grade facilities or appurtenances of any kind would be constructed, there would be no potential for effects on navigable airspace. In consideration of these factors, the proposed projects are considered consistent with the SJC Comprehensive Land Use Plan. As identified in the *Biological Resources* section of this checklist, the City is not a signatory to the Santa Clara Valley Habitat Plan (County of Santa Clara et al. 2012) , and the City is therefore outside the area covered by the Plan. There is no adopted habitat conservation plan or natural community conservation plan covering the proposed project area, and thus no potential for conflict with conservation plans.

There would be No Impact related to conflict with any land use plan, policy, or regulation adopted to reduce environmental impacts. No mitigation is required.

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<b>XII. MINERAL RESOURCES</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Checklist Responses

### Background

Under the Surface Mining and Reclamation Act (SMARA) (California Public Resources Code Sections 2710–2719), the State of California evaluates and classifies the mineral resources of lands throughout the state. Evaluation commonly occurs on a county by county basis but may also focus on areas that are of particular interest or concern due to the known presence of resources. Lands are designated with Mineral Resource Zone (MRZ) identifiers, as follows. MRZ classification is based on available geologic information—including geologic mapping and other information on surface exposures, drilling records, and mine data—in combination with socioeconomic factors such as market conditions and urban development patterns.

- MRZ-1: areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- MRZ-3: areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4: areas where available information is inadequate for assignment into any other MRZ.

Additional sub-classification is used in some areas to provide further nuance.

The goal of SMARA is to avoid and manage land use conflicts between urban growth and essential mineral production. It provides a comprehensive surface mining and reclamation policy intended to encourage production and conservation of mineral resources while seeking to ensure that the adverse environmental effects of mining are prevented or minimized; that mined lands are reclaimed and residual hazards to public health and safety are eliminated; and that other values such as recreation, watershed, wildlife, and aesthetic quality are considered when decisions to allow mining are made.

### Potential to Reduce Availability of Regionally Important Mineral Resources

All of the project Segments are located on the portion of the Santa Clara Valley floor zoned MRZ-1 for aggregate resources by the State of California pursuant to the Surface Mining and Reclamation Act (Kohler-Antablin 1996). MRZ-1 zoning applies to areas where adequate information indicates that no significant mineral deposits are present, or where such deposits are judged unlikely to be present. Moreover, all of the Segments are located in extensively developed areas that are zoned for land uses incompatible with mineral extraction activities. There would be No Impact related to loss or reduced availability of mineral resources of value to the region or the state as a whole. No mitigation is required.

### Potential to Reduce Availability of Locally Important Mineral Resources

Segment 100 is located in an area that has no history of mining or minerals extraction, and in recent decades has become increasingly developed with land uses that are incompatible with such activities. Segments 231 – 233 and Segment 242 are just south the Baylands, where evaporative production of salt from diked seawater remained an important contributor to the local economy into recent decades. However, with the recent—and expanding—push to restore tidal exchange and reinstitute natural habitat in the former Baylands salt ponds (see for example <http://www.southbayrestoration.org>), it seems unlikely that salt extraction will regain its former economic importance in the South Bay region. In this context, No Impact is reasonably foreseeable at any of the Segments with respect to locally important mineral resources. No mitigation is required.

### Reference Cited in this Section

Kohler-Antablin, S. 1996. Update of Mineral Land Classification: Aggregate Materials in the South San Francisco Bay Production-Consumption Region (California Division of Mines and Geology Open-File Report 96-03). Available: <https://maps.conservation.ca.gov/cgs/informationwarehouse/mlc/>. Downloaded: March 2022.

<b>XIII. NOISE</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	■ (construction at Segments 231 – 233, 242)	■ (construction at Segment 100) (potential long-term Benefit at all Segments)
(b) Result in generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■ (potential long-term Benefit)
(c) For a project located in the vicinity of a private airstrip or within an airport land use plan area, or, where such a plan has not been adopted, within 2 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■

### Discussion of Checklist Responses

#### Potential to Generate Substantially Increased Ambient Noise Levels

##### City Noise Standards

In general, noise in Santa Clara is regulated under Chapter 9.10 of the City Code, which identifies maximum exterior noise levels based on land use (zoning). Section 9.10.230 also restricts the hours in which off-street construction can take place within 300 feet of residentially zoned property to the period between 7:00 AM and 6:00 PM Monday through Friday and between 9:00 AM and 6:00 PM Saturday. All five Segments except Segment 231 would entail in-street construction; Section 231 is thus the only segment potentially subject to this restriction. However, Segment 231 is not located within 300 feet of any residentially zoned property, and is therefore also exempt from the restriction.

Beyond the limitation on construction hours near residential properties, Chapter 9.10 also contains noise limitations that vary depending on the time of day and the proximity of types of properties. During the hours of 7:00 AM – 6:00 PM Monday through Friday and 9:00 AM – 6:00 PM Saturday, no noise limitations apply. Outside those hours, construction work in the vicinity of residential, commercial, office, or planned development

parcels is subject to a noise limit from 50 to 65 dB, depending on the time and location. No limits apply in industrial-zoned areas.

Segment 100 is located in an industrial zone; work at this Segment is therefore not subject to noise limits. Segments 231, 232, 233, and 242 all adjoin Planned Development and Public/Quasi Public zones. For Public/Quasi Public uses, the limit is 55 dB from 7:00 AM to 10:00 PM and 50 dB from 10:00 PM to 7:00 AM. For Planned Development “the most restrictive noise standard for the comparable zone district, as determined by the Director of Planning and Inspection, shall apply.” Segments 231, 232, and 233 are close enough to the commercial property at 2550 Great America Way that they would likely be subject to the Commercial/Office zone limits, which are 65 dB from 7:00 AM to 10:00 PM and 60 dB from 10:00 PM to 7:00 AM.<sup>17</sup>

Construction hours on City projects are typically 7:00 AM – 5:00 PM Monday through Friday, except for holidays. If work outside these hours is necessary for City projects, an internal review is conducted to minimize noise disturbance as much as possible while still accomplishing the work required to provide needed public services.<sup>18</sup> Additionally, recognizing that construction noise can be annoying and can create substantial disturbance, Section 1.15 of the City’s Standard Specifications (Noise Control) requires contractors on City projects to meet OSHA standards and to limit certain noise-generating activities to the hours when they are least likely to be disturbing. Contractors must also ensure and provide certification to the City that all construction equipment and vehicles are maintained in good mechanical condition and equipped with properly installed engine mufflers. Further,

- contractors on City projects are required to take reasonable measures to avoid unnecessary noise, based on the normal ambient sound levels in the area during working hours
- equipment must be operated in the manner that generates the least noise possible while still accomplishing the needed work efficiently
- noise screens or barriers must be used when they offer an effective means of reducing noise disturbance to the occupants of buildings adjacent to construction sites

### Anticipated Construction Noise Levels

Construction, and particularly the use of heavy equipment and equipment such as the sewer cleaning machine required for CIPP installation, would generate considerable noise. Table 3-8 shows projected noise levels for CIPP lining and manhole repairs based on the standard Federal Transit Administration (FTA) (2006) methodology for construction noise assessment<sup>19</sup> and compares them to applicable City noise limits for Segments 231 – 233 and 242; as noted above, Segment 100 is located in an industrial-zoned area where there is no applicable noise standard, and is therefore not included in the table.

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<sup>17</sup> For private projects, work may be authorized by permit to exceed the noise limits typically applied to surrounding land uses, although this stipulation does not apply to the proposed projects since they are City undertakings.

<sup>18</sup> As discussed in Section 2, night work may be necessary to avoid disrupting traffic flow and comply with City requirements for keeping vehicle travel lanes available during peak traffic hours.

<sup>19</sup> This approach calculates combined noise levels based on the two loudest sound sources at the work site, assuming continuous operation at full power over a period of 1 hour, and models noise attenuation with increasing distance from the source. Noise levels are reported in A-weighted decibels (dBA), a measure of sound level that is mathematically corrected to account for the frequencies to which the human ear is most sensitive.

**Table 3-8. Potential Construction Noise Generation**

Construction Phase*	Distance from Work Area (feet)	Noise Level (dBA)	City Noise Limit Exceeded? **	
			Segments 231 – 233	Segment 242
CIPP lining	50	83	X	X
	100	77	X	X
	150	73	X	X
	200	71	X	X
	250	69	X	X
	300	67	X	X
	350	66	X	X
	400	65	10 PM – 7 AM only	X
	450	64	10 PM – 7 AM only	X
	500	63	10 PM – 7 AM only	X
	550	62	10 PM – 7 AM only	X
	600	61	10 PM – 7 AM only	X
	650	60		X
	700	60		X
	750	59		X
	800	59		X
	850	58		X
	900	58		X
	950	57		X
	1000	57		X
	1050	56		X
	1100	56		X
	1150	56		X
1250	55	10 PM – 7 AM only		
1300	54	10 PM – 7 AM only		
1350	54	10 PM – 7 AM only		
1400	54	10 PM – 7 AM only		
1450	54	10 PM – 7 AM only		
1500	53	10 PM – 7 AM only		
Manhole repairs	50	87	X	X
	100	81	X	X
	150	77	X	X
	200	75	X	X
	250	73	X	X
	300	71	X	X
	350	70	X	X
	400	69	X	X

Construction Phase*	Distance from Work Area (feet)	Noise Level (dBA)	City Noise Limit Exceeded?**	
			Segments 231 – 233	Segment 242
	450	68	X	X
	500	67	X	X
	550	66	X	X
	600	65	10 PM – 7 AM only	X
	650	64	10 PM – 7 AM only	X
	700	64	10 PM – 7 AM only	X
	750	63	10 PM – 7 AM only	X
	800	63	10 PM – 7 AM only	X
	850	62	10 PM – 7 AM only	X
	900	62	10 PM – 7 AM only	X
	950	61	10 PM – 7 AM only	X
	1000	61	10 PM – 7 AM only	X
	1050	60		X
	1100	60		X
	1150	60		X
	1250	59		X
	1300	58		X
	1350	58		X
	1400	58		X
	1450	58		X
	1500	57		X

**Note:**

\* Based on Table 12-1 in Federal Transit Administration (2006) and Hammond (pers. comm.[a], pers. comm.[b]), modeling assumed that the two loudest pieces of pieces of equipment used during CIPP lining would be the Vac-Con sewer cleaning machine and the backhoe (84 dBA and 81 dBA respectively, measured at the standard reference distance of 50 feet from source). The two loudest pieces of equipment for manhole repairs were assumed to be the 10-wheeler dump truck and the loader (88 dBA and 85dBA respectively, again at 50 feet from source) (Federal Transit Administration 2006).

\*\* Unless otherwise noted, an “X” in these columns indicates that modeled noise levels exceed both the daytime (7 AM – 10 PM) and nighttime (10 PM – 7 AM) standards.

As Table 3-8 shows, at Segments 231 – 233,

- noise associated with CIPP lining could exceed both day and nighttime standards at distances up to about 350 feet from the work area, and could exceed nighttime levels at distances up to 600 feet
- noise associated with manhole repairs could exceed both day and nighttime standards at distances up to about 550 feet from the work area, and could exceed nighttime levels at distances up to 1,000 feet

At Segment 242,

- noise associated with CIPP lining could exceed both day and nighttime standards at distances up to about 1,150 feet from the work area, and could exceed nighttime levels at distances up to 1,500 feet

- noise associated with manhole repairs could exceed both day and nighttime standards at distances of 1,500 feet or more

However, construction noise would be temporary and quite short-term, lasting no more than about 10 work days total for Segments 231 – 233 and another 4 work days for Segment 242 (see Table 2-4), and noise effects should be reduced by the noise control requirements in the City’s Standard Specifications, discussed above. Moreover, although the applicable noise standards are quite restrictive—in part reflecting the City’s intent for the former Santa Clara Golf & Tennis Club course to be redeveloped with mixed uses including residences—there are currently no residential or other particularly noise-sensitive uses within 1,000 feet of any of these Segments. The closest residential uses are mobile homes about 1,300 feet northeast of Segment 231 across SR 237, far enough away that they should not be affected by construction noise. In view of these considerations, construction noise impacts at Segments 231 – 233 and 242 are evaluated as Less than Significant. No mitigation is required.

At Segment 100, which is located in an industrial area, there is no applicable noise limit. There would thus be no potential to exceed City noise standards and No Impact related to construction noise is anticipated. No mitigation is required.

#### Long-Term Noise Levels

Over the long term, the proposed repairs would decrease the need for maintenance activity at the project Segments. As a result, once construction is complete, the projects would have No Impact with regard to increased noise generation, and are expected to result in a long-term Benefit. No mitigation is required.

#### Potential to Generate Excessive Groundborne Vibration/Groundborne Noise

The City Code (Section 9.10.050) regulates vibration from fixed (stationary) sources but does not establish limits for construction-related vibration. Like noise, vibration from construction on privately owned parcels is regulated by limiting the hours work is allowed; there is no standard for vibration from work on publicly owned parcels, although, as with noise, the City recognizes that vibration generated by construction can be intrusive and annoying. The activities proposed at all Segments typically generate very low levels of vibration, however. Work would also be of very short duration at each Segment, and the requirements of the Standard Specifications that are intended to reduce noise disturbance would also reduce vibration disturbance. As a result, No Impact with regard to exceedance of any applicable vibration standard is anticipated during construction. No mitigation is required.

As identified in the previous item, the proposed repairs would decrease the need for ongoing maintenance activity at the project Segments. As a result, once construction is complete, the projects would have No Impact with regard to increased generation of excessive groundborne vibration, and are expected to result in a long-term Benefit. No mitigation is required.

#### Potential for Exposure to Excessive Airport Noise

##### Noise Related to Private Airstrips

None of the project Segments is located in proximity to any private airport or airstrip. There would be No Impact related to noise associated with private airstrips. No mitigation is required.

### Noise Related to Public/Public Use Airports

The Federal Aviation Administration (FAA) considers 65 decibels (dB)  $L_{dn}$  as the threshold of significant aircraft noise (Federal Aviation Administration 2018).<sup>20</sup> All of the project Segments are outside the area expected to experience noise levels of 65 dB CNEL<sup>21</sup> or more as a result of operations at SJC, even with the forecasted increase in airport usage that was incorporated into the County Airport Land Use Commission's noise modeling (Santa Clara Airport Land Use Commission 2011, Figure 5). This includes Segment 100, which is the closest to the Airport. As a result, there would be No Impact with regard to exposing construction workers to excessive airport noise levels. No mitigation is required.

Over the long term, because routine operations and maintenance would resume following repairs, and maintenance needs would likely decrease, there would be no need for increased operations or maintenance staffing as a result of the proposed projects, and no increase in exposure of City workers to airport noise over the long term. Over the long term, there would be No Impact, and no mitigation is required.

### References Cited in this Section

Federal Aviation Administration. 2018. Aircraft Noise Issues. Available: [https://www.faa.gov/about/office\\_org/headquarters\\_offices/apl/noise\\_emissions/airport\\_aircraft\\_noise\\_issues/](https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/airport_aircraft_noise_issues/). Accessed: July 2018.

Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment. Available: <https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/fta-noise-and-vibration-impact-assessment>. Downloaded: December 2012 and August 2018.

Hammond, J. (Vac-Con Vector). Pers. comm.[a]. Email to Anna Busing (Redtail Consulting) transmitting Vac-Con noise ratings, October 6, 2022. Email and attachment on file with Redtail Consulting.

Hammond, J. (Vac-Con Vector). Pers. comm.[b]. Email to Anna Busing (Redtail Consulting), October 6, 2022. On file with Redtail Consulting.

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Santa Clara County Airport Land Use Commission. 2012. Comprehensive Land Use Plan, Santa Clara County: Moffett Federal Airfield. (Last amended November 18, 2016.) Available: [https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC\\_NUQ\\_CLUP.pdf](https://www.sccgov.org/sites/dpd/DocsForms/Documents/ALUC_NUQ_CLUP.pdf). Downloaded: July 2018.

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<sup>20</sup>  $L_{dn}$  refers to the "day-night level", a weighted average of sound levels throughout the day, corrected for the varying sensitivity of the human ear to sounds with different frequencies and with a penalty added for sounds occurring during the nighttime hours (10:00 PM to 7:00 AM).

<sup>21</sup> CNEL stands for Community Noise Equivalent Level. The FAA considers CNEL as equivalent to  $L_{dn}$  for purposes of airport land use planning (Santa Clara County Airport Land Use Commission 2012).

<b>XIV. POPULATION &amp; HOUSING</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Checklist Responses

#### Potential to Induce Unplanned Population Growth

The proposed projects would entail repairs to existing sanitary sewer infrastructure with no increase in capacity. They would not directly involve construction of new housing or businesses of any kind and would not indirectly foster new development by expanding the capacity of City infrastructure. Additionally, although the repaired sewer lines may serve future development in the City, any such development would take place under the auspices of the City’s General Plan (City of Santa Clara 2014) and/or specific plans, and would be subject to separate environmental review and City approvals if or when it is proposed. The proposed repairs would thus have No Impact related to inducement of population growth, and no mitigation is required.

#### Potential to Displace Existing Populations or Housing

The construction workforce required to carry out the proposed repairs would be comparatively small (estimated at no more than 11 persons onsite at any given time; see Tables 2-1, 2-2, and 2-3) and is expected to draw on the locally available workforce within the greater San Francisco Bay Area. Similarly, once completed, the projects would not change City sewer operations, although they should slightly reduce overall maintenance needs in the foreseeable future. As a result, they are not expected to require long-term changes in City staffing. They would thus have No Impact related to displacement or relocation of people either during the construction period or over the long term.

Because the proposed projects would involve repairs to existing infrastructure that is already in place within City roadways and easements, there would be no potential to displace existing housing. There would be No Impact related to displacement of housing, and therefore No Impact related to displacement of people over the long term.

No mitigation is required.

### Reference Cited in this Section

City of Santa Clara. 2014. Celebrating Our Past, Present and Future: City of Santa Clara 2010 – 2035 General Plan. Last updated December 2014. Available: <http://santaclaraca.gov/government/departments/community-development/planning-division/general-plan>. Downloaded: January 2019.

<b>XV. PUBLIC SERVICES</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) 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:				
(i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Checklist Responses

As discussed in the previous item, the proposed projects would entail repairs to existing sanitary sewer infrastructure with no increase in capacity. The repairs would not directly induce population growth, nor would they remove obstacles to growth or otherwise indirectly foster development. As a result, the proposed projects would have No Impact related to the need to construct new public facilities or expand public services. No mitigation is required.

### References Cited in this Section

None.

<b>XVI. RECREATION</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<i>Would the project:</i>				
(a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion of Checklist Responses

#### Potential to Increase Use of Existing Parks/Recreational Facilities

As discussed in the two previous items, the proposed projects would not construct new housing, relocate or displace populations, or indirectly foster future growth (planned or unplanned). Therefore, they would not increase the use of existing parks or recreational facilities. There would be No Impact related to overuse and physical deterioration of parks or recreational facilities, and no mitigation is required.

#### Potential to Include or Require Construction or Expansion of Parks/Recreational Facilities

The proposed projects focus on need repairs to sanitary sewer infrastructure. They would not include or involve parks or recreational facilities of any type. There would be No Impact related to construction of such facilities, and no mitigation is required.

### References Cited in this Section

None.

<b>XVII. TRANSPORTATION</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<i>Would the project:</i>				
(a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>XVII. TRANSPORTATION</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(b) Conflict or be inconsistent with <i>CEQA Guidelines</i> Section 15064.3, Subdivision [b]?	<input type="checkbox"/>	<input type="checkbox"/>	■  (construction period VMT)	■  (conflict with Sec 15064.3) (potential slight long-term VMT Benefit)
(c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■
(d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■
(e) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■

### Discussion of Checklist Responses

#### Potential to Conflict with Circulation System Programs, Plans, Ordinances, or Policies

##### Background

The City’s General Plan (City of Santa Clara 2014) envisions “[a] convenient and efficient Citywide system that promotes a balance of all modes of transportation”, one that includes a safe and efficient multimodal street system and encourages alternative transportation modes (transit, bicycle, and pedestrian) as alternatives to car travel. The General Plan also encourages both public- and private-sector participation in Transportation Demand Management (TDM), a comprehensive approach to reduce automobile use by promoting alternatives such as public transit, ridesharing, bicycling, walking, and telecommuting through measures such as carpool/vanpool programs, car and bicycle sharing opportunities, support for telecommuting workers, flexible and alternate work schedules, and onsite child care and cafeterias (City of Santa Clara 2014).

Consistent with the General Plan, the City recently updated its Bicycle Master Plan, which “establish[es] a long-term vision for improving bicycling in Santa Clara through policy, program, and project recommendations” (City of Santa Clara 2018). To that end, the Bicycle Master Plan

- defines the City’s strategy for developing a bicycle network that provides access to transit, schools, and other key destinations, and includes corridor, intersection, and end-of-trip improvements
- provides for education, encouragement, enforcement, and evaluation programs.

- identifies a plan to prioritize project implementation so City resources will be invested efficiently and for maximum benefit

The overarching vision of the Bicycle Master Plan is a “healthy, thriving, and safe city where people of all ages and abilities may easily and comfortably ride a bicycle as part of their daily lives” (City of Santa Clara 2018). Objectives focus on safety, connectivity, and bicycle friendliness, and the plan includes comprehensive recommendations to address the conditions representing challenges and needs identified through community outreach and analysis of City data (City of Santa Clara 2018).

The City also recently developed its first-ever Pedestrian Master Plan, intended to “make Santa Clara a walkable community” offering a comprehensive network of pedestrian routes that are safe, convenient, and comfortable for people of all ages and abilities (City of Santa Clara 2019a). The Pedestrian Master Plan identifies three key challenges to this vision: disproportionate risk to pedestrians in traffic collisions; the City’s existing layout, with land uses separated and dispersed; and limited availability of pedestrian crossings over major roadways and transit corridors. A central strategy of the Plan is designation of nine Priority Pedestrian Zones that offer the highest potential for increasing walkability. Objectives focus on approaches to

- increase pedestrian safety, comfort, and convenience
- develop lively, attractive pedestrian spaces
- identify, develop, and maintain a complete and convenient pedestrian network

The Plan also identifies and prioritizes specific projects aimed at addressing pedestrian network deficits (City of Santa Clara 2019a).

Complementary to the Bicycle and Pedestrian Master Plans, the City has also adopted a Neighborhood Traffic Calming Program to improve safety and address community concerns regarding traffic flow on neighborhood streets. Measures included in the Neighborhood Traffic Calming Program include increased enforcement, additional signage and striping, speed warning radar trailers and electronic speed feedback signs, higher-visibility crosswalks, and roadway design features such as intersection bulb-outs (City of Santa Clara 2019b).

Public transit within the City is provided by VTA, which offers regional light rail service as well as local and commuter bus service and paratransit and also participates in countywide bicycle and complete streets circulation planning. VTA’s governing documents are its Strategic Plan (Santa Clara Valley Transportation Authority 2016), Valley Transportation Plan (Santa Clara Valley Transportation Authority 2015), and Congestion Management Program (Santa Clara Valley Transportation Authority 2021).

VTA’s Strategic Plan is the guiding high-level vision document, establishing the agency’s mission, vision, and values as a basis for business and program planning (Santa Clara Valley Transportation Authority 2016).

The Valley Transportation Plan is intended to provide a long-range vision for the Countywide transportation system. It considers all transportation modes and takes into account the connections between transportation, land use, air quality, energy consumption, and community livability. Objectives of the Valley Transportation Plan are to

- facilitate the creation and support of an integrated multimodal transportation system serving all socioeconomic groups efficiently and sustainably
- pursue, develop, and implement advances in technology, management practice, and policy

- be the region’s foremost advocate for transportation projects, programs, and funding

Themes in support of these objectives include (1) efficiency and mobility, (2) sustainability and growth, (3) connectivity and technology, (4) air quality and energy use, and (5) fiscal responsibility (Santa Clara Valley Transportation Authority 2015).

The Congestion Management Program addresses VTA’s responsibilities as the Congestion Management Agency for Santa Clara County, per California Government Code transportation planning requirements (Government Code Section 65088 ff.) aimed at fostering interjurisdictional/interagency transportation planning to reduce traffic congestion, improve land use decision-making, and reduce air pollution (Santa Clara Valley Transportation Authority 2019b). It includes a capital improvements program specifically aimed at these goals.

### Potential for Conflicts

*Construction Period.* No regular transit routes use Lafayette Street or Mathew Street, and no bicycle facilities are present on Mathew Street. Lafayette Street provides Class II bikeways (separate bicycle lanes established by pavement striping and signage but not physically separated from vehicular traffic) in both the north and south directions.

Construction and staging at all of the Segments proposed for repair would add construction vehicles, equipment, and personnel to City roadways. However, as discussed in the *Hazards & Hazardous Materials* section of this checklist, the City’s Standard Specifications require contractors on Public Works projects to develop a Traffic Control and Detour Plan that provides detours as necessary to maintain safe passage for vehicles, bicyclists, and pedestrians. Because this requirement is multimodal (i.e., addresses not only the needs of automobile traffic, but also transit, bicyclists, and pedestrians), the proposed repairs are considered consistent with the City’s Bicycle and Pedestrian Master Plans (City of Santa Clara 2019a, 2019b) and with VTA’s transportation system plans (Santa Clara Valley Transportation Authority 2015, 2016, 2021). As a result, there would be No Impact with regard to conflict with a program, plan, ordinance, or policy addressing the circulation system at any of the project Segments during construction. No mitigation is required.

*Long Term.* Once construction is complete, the City’s routine program of operations and maintenance would resume. Routine activities related to essential utilities are typically considered in long-range transportation planning, and future maintenance work would be subject to requirements for multimodal traffic safety similar to those that apply during the construction period. Future operations and maintenance are thus also considered consistent with relevant City and VTA transportation system plans, and over the long term, there would be No Impact with regard to conflict with a program, plan, ordinance, or policy addressing the circulation system. No mitigation is required.

### Potential for Conflict or Inconsistency with *CEQA Guidelines* Section 15064.3[b]

#### Background

For many years, the prevailing approach to analysis of traffic impacts under CEQA focused on roadway and intersection function or *level of service* (LOS)—that is, on the experience of the driver in traffic. Under this approach, as long as roadways and intersections were projected to function at acceptable levels as defined by local agency standards, a project’s impacts were typically found to be Less than Significant even if the project would add a considerable volume of traffic to the roadway system.

More recently, however, the focus of concern has shifted progressively from roadway and intersection function to the potential for projects to increase overall vehicular travel, expressed as *vehicle miles traveled* or VMT. In part, this responds to the increasing visibility of climate change issues; vehicle exhaust is a source of GHG

emissions. It also reflects growing concern about the other environmental impacts of development “sprawl” and an increased will to capitalize on opportunities for infill and redevelopment of more compact urban centers.

Now, under *CEQA Guidelines* Section 15064.3[b], which was adopted in December 2018 and became mandatory statewide in July 2020, VMT—defined as “the amount and distance of automobile travel attributable to a project”—is explicitly recognized as the most appropriate metric for transportation impacts and lead agencies are directed that a potential “effect on automobile delay” should not be regarded as a significant environmental impact for most projects. The lead agency has discretion in choosing the method used to identify a project’s VMT (*CEQA Guidelines* 15064.3 [b][4]) and, implicitly, the responsibility to identify an appropriate, substantiated threshold of significance (the level at which project VMT is considered a significant impact and requires mitigation). The *Guidelines* (15065.3[b][3]) also afford lead agencies the discretion to utilize qualitative methodology if quantitative methods or models are not yet available to estimate VMT for near-term projects.

Responding to the requirements of *CEQA Guidelines* 15064.3, the City adopted a new *Transportation Analysis Policy* in June 2020 (City of Santa Clara 2020). The Policy

- establishes VMT as the methodology for analyzing transportation impacts under CEQA, along with thresholds at which VMT impacts are considered Significant
- requires all proposed projects to evaluate and disclose the VMT they would generate, unless they qualify for one of several exemptions
- identifies types of projects that are exempt from VMT analysis requirements because they are presumed to have a Less than Significant impact based on current state guidance
- requires a transportation operational analysis to address transportation deficiencies resulting from new projects

The policy also continues to recognize LOS as an important operational measure of intersection efficiency although the City no longer uses it as a metric for significance under CEQA.

Per the City’s *Transportation Analysis Policy* (City of Santa Clara 2020), the following types of projects are exempt from the requirement for detailed analysis and disclosure of VMT generation. Projects that do not fall into one of these categories must analyze and disclose VMT impacts.

- Small projects that generate 110 daily trips or less
- Retail projects of 50,000 square feet or less (“local serving retail”)
- Local serving public projects such as fire stations, neighborhood parks, libraries, and community centers
- 100%–affordable housing projects
- Transit supportive projects, including
  - projects within 0.5 mile of an existing major transit stop or an existing transit stop along a high-quality transit corridor<sup>22</sup>

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<sup>22</sup> The CEQA statute defines a *major transit stop* as a site that contains (a) an existing rail or bus rapid transit station, (b) the intersection of two or more major bus routes with service every 15 minutes or less during peak commute periods, or (c) a major transit stop that is included in Plan

- office/R&D projects with a minimum floor area ratio (FAR) of 0.75<sup>23</sup>
- residential projects with a minimum density of 35 units/acre
- project that promote multimodal transportation networks
- project that include transit-oriented design elements
- projects that do not provide excess parking (i.e., projects that do not provide more parking for residents, customers, or employees than the City Code requires)
- projects that do not result in loss of affordable dwelling units

Projects that fall into one of the above categories do not require VMT analysis, but must still address impacts on LOS, as appropriate.

### Potential for Conflicts

Construction of the proposed repairs would generate vehicle trips for contractor mobilization and demobilization materials deliveries, worker commute trips, and trips by City construction management and inspection personnel. No more than about 10 construction workers are expected to be onsite at any given time (see Tables 2-1 and 2-2); worker commutes would therefore generate no more than about 10 round trips or 20 one-way trips per day, and even with the addition of equipment mobilization/demobilization, periodic materials deliveries, and site visits by a small number of City inspection and construction management staff, it is clear that repairs would be well below the 110 trips per day threshold at which detailed analysis of VMT is required. No further analysis is warranted, and construction period impacts related to VMT generation are considered Less than Significant. No mitigation is required.

Once the proposed repairs are complete, normal operations and maintenance would resume. There would be no long-term increase in VMT generation as a result of the repairs; if anything, there would likely be a (very) slight long-term decrease due to the anticipated decrease in frequency of maintenance. Moreover, the projects focus on repairs to existing infrastructure; as such, they would support existing City development rather than new growth, and in particular, they would not foster the type of new “sprawl” that has the potential to generate substantial increases in VMT. No further analysis is warranted. Over the long term, the projects would have No Impact, and could result in a slight long-term Benefit, with regard to Citywide VMT generation. No mitigation is required.

The projects are accordingly evaluated as consistent with *CEQA Guidelines* Section 15064.3[b]. There would be No Impact related inconsistency with *Guidelines* 15064.3[b], and no mitigation is required.

### Potential to Increase Hazards Due to Design Geometry or Incompatible Uses

The proposed projects would not result in above-grade modifications to any City roadways. There would be No Impact related to roadway design features.

The repairs are proposed to improve the integrity and reliability of existing sanitary sewer infrastructure serving existing land uses. They would not modify zoning or otherwise alter land uses in the vicinity of the project

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Bay Area 2040 (California Public Resources Code Section 21064.3). A *high-quality transit corridor* is a corridor with fixed-route bus service with service intervals no longer than 15 minutes during peak commute hours (Public Resources Code Section 21155[b]).

<sup>23</sup> *Floor area ratio* refers to the ratio between the gross square footage of a building (irrespective of number of stories) and the square footage of the parcel it is built on.

Segments. They would therefore have No Impact related to potential future introduction of incompatible traffic to City roadways.

No mitigation is required.

### Potential to Result in Inadequate Emergency Access

During construction, as described in the *Hazards & Hazardous Materials* section of this checklist, the City's Standard Specifications require contractors to develop a Traffic Control and Detour Plan that identifies lane closures and No Parking areas, if any; provides detours as necessary; and provides for ingress/egress to adjacent properties. Contractors are also prohibited from impeding the use of roadways, walkways, and other facilities that convey vehicle and pedestrian traffic without providing for safe temporary detours approved by the City. With these requirements in place, there would be No Impact related to inadequate emergency access during construction.

Over the longer term, as identified above, the proposed repairs would not result in above-grade modifications to City roadways, nor would they modify driveways or other access points to nearby properties. As a result, there would also be No Impact related to inadequate emergency access over the long term.

No mitigation is required.

### Potential to Conflict with Applicable Congestion Management Program and/or LOS Standards

As discussed above in *Potential for Conflict or Inconsistency with CEQA Guidelines Section 15064.3[b]*, the City continues to use LOS as an operational measure of intersection efficiency, and the City's current (2020) *Transportation Analysis Policy* requires projects that are exempt from VMT analysis to "measure LOS as part of an operational analysis, as appropriate, and provide improvements or address project related operational deficiencies". The City follows VTA's Congestion Management Plan guidelines, which state that a project's traffic impacts should be analyzed during the weekday AM and PM peak periods if the project would generate 100 or more net new AM or PM peak-hour trips.

Construction would temporarily result in the addition of vehicles to area roadways, but due to the small number of workers and limited equipment required (see Tables 2-1 and 2-2), the construction traffic generated by the proposed projects would be substantially lower than the VTA's screening threshold. The additional traffic generated by construction would also represent a temporary and very short term effect (see Table 2-3) and is therefore considered consistent with VTA and City congestion management goals. Once the repairs are complete, normal operations would resume, with maintenance needs expected to decrease; as result, there would be no long-term increase in traffic generation as a result of the proposed projects. There would be No Impact related to conflict with an applicable congestion management program or LOS standards, and no mitigation is required.

### References Cited in this Section

City of Santa Clara. 2018. Bicycle Plan Update 2018. Available: <https://www.santaclaraca.gov/our-city/departments-g-z/public-works/engineering/traffic-engineering/bicycle-master-plan-update-2018>. Downloaded: March 2022.

City of Santa Clara. 2019a. Pedestrian Master Plan 2019. Available: <https://www.santaclaraca.gov/home/showpublisheddocument/66646/637184802740430000>. Downloaded: March 2022.

City of Santa Clara. 2019b. Neighborhood Traffic Calming Program. Available: <http://santaclaraca.gov/government/departments/public-works/engineering/traffic-engineering/neighborhood-traffic-calming-program-ntcp>. Accessed: January 2019.

City of Santa Clara. 2020. Transportation Analysis Policy. Available: <https://www.santaclaraca.gov/our-city/departments-g-z/public-works/engineering/traffic-engineering/transportation-analysis-policy-update>. Downloaded: April 2022.

Santa Clara Valley Transportation Authority. 2015. VTP2040, The Long-Range Transportation Plan for Santa Clara County. Available: [http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site\\_Content/VTP2040\\_final\\_hi%20res\\_030315.pdf](http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site_Content/VTP2040_final_hi%20res_030315.pdf). Accessed: March 2022.

Santa Clara Valley Transportation Authority. 2016. Create Collaborate Lead, VTA 2017 – 2022 Strategic Plan. Available: [http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site\\_Content/2016%20Plan\\_Final%20Layout%205\\_9\\_17%20\(2\).pdf](http://vtaorgcontent.s3-us-west-1.amazonaws.com/Site_Content/2016%20Plan_Final%20Layout%205_9_17%20(2).pdf). Accessed: March 2022.

Santa Clara Valley Transportation Authority. 2021. 2021 Congestion Management Program Document. Available: <https://www.vta.org/programs/congestion-management-agency>. Accessed: March 2022.

<b>XVIII. TRIBAL CULTURAL RESOURCES</b> <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
(i) 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], or	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ii) 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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b>XVIII. TRIBAL CULTURAL RESOURCES</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				

### Discussion of Checklist Responses

#### Potential for Adverse Change in Significance of a Tribal Cultural Resource

No recorded archaeological resources have been identified in the vicinity of any of the project Segments (Basin Resources Associates 2022). As discussed in the *Cultural Resources* section of this checklist, the cultural resources review for the proposed projects included outreach to NAHC for information in their Sacred Lands File. Because the results of the Sacred Lands File search were positive, this was followed by outreach to 11 locally knowledgeable Native American contacts identified by NAHC as potentially able to provide additional information (see *Cultural Resources* for details). As of October 2022, no responses have been received (Basin Research Associates 2022, Busby pers. comm.). Additionally, as identified in Section 1 of this Initial Study (see *Native American Consultation*), the City reached out to the Tamien Nation—the only tribe that has requested formal notification of upcoming projects per *CEQA Guidelines* Section 21080.3.1 (Assembly Bill 52)—with an invitation to engage in government-to-government consultation regarding the proposed repairs. The Tamien Nation did not request consultation. In this context, no recognized tribal cultural resources are considered to be present in the immediate vicinity of any of the project Segments. No Impact on tribal cultural resources is anticipated, and no mitigation is required.

### References Cited in this Section

Basin Research Associates. 2022. Cultural Resources Review, Five Sanitary Sewer Repair Locations, Lafayette Street and Mathew Street, City of Santa Clara, Santa Clara County. Prepared for Redtail Consulting (Fremont, CA), Mott MacDonald (San José, CA), and City of Santa Clara. Appendix C to this Initial Study.

Busby, C.I. (Basin Research Associates). Pers. comm. Email to Anna Busing (Redtail Consulting), October 5, 2022. On file with Redtail Consulting.

<b>XIX. UTILITIES &amp; SERVICE SYSTEMS</b>  <i>Would the project:</i>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(a) Require or result in the relocation or construction of new or expanded water or wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (potential long-term Benefit)
(e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Checklist Responses

### Potential Need for New or Relocated Utilities

The proposed projects focus exclusively on repairs to existing sanitary sewer infrastructure. As described in the *Population & Housing* section of this checklist, they would have no potential to increase or relocate area populations. As a result, they would neither require nor result in relocation of water or wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. There would be No Impact, and no mitigation is required.

### Potential for Insufficient Water Supplies

Repair work could require the incidental use of water during construction—for instance, for dust control. However, this would be a temporary, short-term, and comparatively small-volume demand, and typical construction usage is well within the scope of the City's forward planning for water supply. Construction use would therefore have No Impact related to insufficient water supplies, and no mitigation is required.

Over the long term, the proposed projects would have no potential to alter the demand for water supply since they would not involve housing construction and would neither increase nor relocate populations (see *Population & Housing* section of this checklist). As a result, there would be No Impact related to the potential for insufficient water supplies in normal, dry, or multiple-dry years. No mitigation is required.

### Potential for Determination of Inadequate Capacity by Wastewater Treatment Provider

As noted throughout this checklist, the proposed projects focus on repairs to existing sanitary sewer infrastructure, with no increase in capacity. They would have no potential to increase wastewater generation, since they would not involve housing construction and would neither increase nor relocate populations. As a result, there would be No Impact related to the potential for a determination of inadequate capacity by the San José – Santa Clara Regional Wastewater Facility. No mitigation is required.

### Potential to Generate Excessive Solid Waste or Impair Waste Reduction Goals

The proposed repairs would generate a small amount of waste during construction, including pavement debris, the sewer pipe and manhole components removed for replacement, and excavated materials. For cost reasons, however, pavement removal and excavation would be limited to the minimum necessary to carry out the repairs, and only existing components that require replacement would be disposed of; there would be No Impact related to generation of excessive solid waste or impairment of waste reduction goals.

Once the proposed repairs are completed, the City's routine program of operations and maintenance would resume, with a likely decrease in maintenance frequency due to the improved condition of the project Segments, as noted in multiple items above. The projects would thus have no potential to increase long-term solid waste generation, and could decrease it. Over the long term, there would be No Impact, and could be a Benefit, related to generation of excessive solid waste and impairment of waste reduction goals. No mitigation is required.

### Compliance with Federal, State, and Local Solid Waste Management and Reduction Statutes

The City's Standard Specifications require compliance with all applicable solid waste handling and disposal statutes. As a result, there would be No Impact related to non-compliance with solid waste statutes during construction, and no mitigation is required.

Similarly, City workers are also required to comply with applicable federal, state, and local waste statutes as they carry out operations- and maintenance-related activities. Consequently, once the City's routine operations and maintenance resume, there would be No Impact related to non-compliance with solid waste statutes, and no mitigation is required.

### References Cited in this Section

None.

<b>XX. WILDFIRE</b>  If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or to the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, or power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Checklist Responses

### Background

Firefighting responsibility in California wildlands is divided among local, state, and federal entities, depending on land ownership, characteristics, population, and incorporation status. Section 4125 of the California Public Resources Code charges the Board of Forestry and Fire Protection with delineating portions of the state where the financial responsibility for preventing and suppressing wildland fires rests primarily with the state. These *State Responsibility Areas* (SRAs) include lands that support forests or trees that produce (or could produce) forest products, and vegetated lands that are sources of water for irrigation, domestic, or industrial use.

Adjacent lands that are, or have the potential to be, used for range or forage purposes are also considered SRAs, as are unincorporated city and county areas with populations less than 25,000, unless the county has accepted fire prevention and suppression responsibility by ordinance. Lands owned or controlled by a federal agency are considered Federal Responsibility Areas (FRAs), and most lands within incorporated city or county boundaries are considered Local Responsibility Areas (LRAs) (California Code of Regulations Sections 4125 – 4129).

Within FRAs, fire protection is typically provided by the federal agency that owns or manages the land. Within SRAs, fire protection is provided by the California Department of Forestry and Fire Protection (CAL FIRE).

Within incorporated LRAs, the local jurisdiction is typically the fire protection provider. In the City, fire

protection—along with emergency medical services, hazardous materials response, and related community education and training—is provided by the Santa Clara Fire Department, which operates 9 fire stations housing a total of 8 engines, 2 trucks, 1 rescue unit, 1 hazardous materials unit, and 2 command vehicles.

### Potential for Wildfire Impacts

As an incorporated city surrounded by other incorporated jurisdictions, Santa Clara is not within or adjacent to any SRA, and none of the project Segments is within or in proximity to any Very High Fire Hazard Severity Zone identified by CAL FIRE (California Department of Forestry and Fire Protection 2022a, 2022b). All of the proposed repair Segments are located in developed areas, and the proposed projects would entail only repairs to existing sanitary sewer infrastructure, which would not increase capacity and thus would not foster additional growth. As a result, the proposed projects

- would have no potential to impair an adopted emergency response plan or emergency evacuation plan for a wildland area
- would not involve or modify wildlands and thus would have no potential to increase the overall risk of wildfire
- would not result in development in or adjacent to wildlands, potentially increasing exposure to wildfire or wildfire-related pollutants
- would not require installation or maintenance of infrastructure in wildlands, potentially increasing wildfire risks
- would not construct housing or relocate populations and therefore would not expose people or structures to risks associated with accelerated post-fire runoff, post-fire slope instability, or drainage changes

There would be No Impact related to an increase in wildfire-related hazards, and no mitigation is required.

### References Cited in this Section

California Department of Forestry and Fire Protection. 2022a. FHSZ Viewer. Available: <https://egis.fire.ca.gov/FHSZ/>. Accessed: March 2022.

California Department of Forestry and Fire Protection. 2022b. Very High Fire Hazard Severity Zones in LRA as Recommended by CAL FIRE. Available <https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/>. Downloaded: March 2022.

<b>XXI. MANDATORY FINDINGS OF SIGNIFICANCE</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
(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?	<input type="checkbox"/>	<input checked="" type="checkbox"/> (environmental degradation, fish and wildlife populations, CA history and prehistory )	<input type="checkbox"/>	<input checked="" type="checkbox"/> (reduction of fish or wildlife habitat)
(b) Does the project have impacts that are individually limited, but cumulatively considerable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> (long-term Benefit)	<input type="checkbox"/>

## Discussion of Checklist Responses

### Potential to Degrade the Quality of the Environment

As discussed the *Air Quality* and *Hazards & Hazardous Materials* sections of this checklist, the proposed repairs would have the potential to result in Significant impacts related to exposure to toxic air contaminants, due to the potential use of styrene resins for CIPP lining, and other hazardous materials exposure, due to the presence of known hazardous materials contamination in the vicinity of the repair Segments. However, the City has identified, and will adopt, mitigation to address these concerns (see Mitigation Measures AIR-1 in the *Air Quality* section and HAZ-1 in the *Hazards & Hazardous Materials* section) consistent with current best practices and applicable regulations. With these measures incorporated, impacts are expected to be Less than Significant. The projects would not result in Significant impacts on water quality, and should Benefit water quality over the long term by ensuring the integrity of City sewer infrastructure. The projects are therefore not expected to degrade the quality of the environment; rather they would benefit environmental quality by preventing sanitary sewer leaks and spills. Impacts related to environmental degradation are accordingly considered Less than Significant. No further analysis is warranted and no additional mitigation is required.

As identified in the *Biological Resources* section of this checklist, the proposed repair Segments are located in urbanized settings that offer very little habitat value, do not support natural vegetation, wetlands, or other jurisdictional waters, and have little potential to support special-status species. The only special-status species considered likely to be present are birds. These include Cooper’s Hawk (DFW Watch List species), which may nest and forage around Segments 231 – 233 and 242; Burrowing Owl (state Species of Special Concern), which may nest near Segments 231 – 232 and forage around all of the Lafayette Street Segments; and American

Peregrine Falcon (USFWS Bird of Conservation Concern, California state Fully Protected species), which is not expected to nest but may also forage near the Lafayette Street Segments and possibly also Segment 100. Multiple common bird species that qualify for special status under CEQA because they are protected by the Migratory Bird Treaty Act may also nest and forage around all of the repair Segments.

Potential disruption of foraging activity should not rise to the level of a Significant impact on special-status bird populations since any foraging birds disturbed by construction would be expected to disperse to nearby areas where foraging opportunities of equal or better quality are available. Disruption of nesting could have a Significant impact on nesting success and thus on local population levels, but the City has identified and will adopt mitigation to avoid disturbance of active nests, eggs, and young of special-status birds:

- Mitigation Measure BIO-1. Protection of Nesting Birds (General), All Segments
- Mitigation Measure BIO-2. Protection of Nesting Burrowing Owl, Segments 231 and 232

With these measures incorporated, impacts on special-status bird breeding would be reduced to a Less than Significant level, and the projects' potential to cause a fish or wildlife population to drop below self-sustaining levels, eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal is also considered Less than Significant. As noted above, no natural habitat is present immediately along any of the proposed repair Segments, so the projects would have No Impact related to reduction of fish or wildlife habitat. No further analysis is warranted and no additional mitigation is required.

As described in more detail in the *Cultural Resources* section of this checklist, there are no recorded archaeological resources within 500 feet of any of the Segments proposed for repair, and the cultural resources study conducted for the projects concluded that both prehistoric and historic archaeological sensitivity of the Segment alignments is low. There are no structures, landmarks, or points of interest of local, state, or federal historic or architectural significance along the Segments, and no sites listed eligible, or potentially eligible for CRHR listing have been identified in proximity to any of the Segments (Basin Research Associates 2022). Consequently, the projects are not expected to have adverse effects on historical resources of any kind. Nonetheless, the City will adopt the following measures, described in detail in the *Cultural Resources* section, to ensure that if an unanticipated discovery is made, it can be treated appropriately:

- CUL-1. Notice of Potential for Buried Cultural Resources in Construction Documents
- CUL-2. Retention of On-Call Archaeologist
- CUL-3. Worker Awareness Training for Cultural Resources
- CUL-4. Evaluation and Treatment of Unanticipated Archaeological Discoveries
- CUL-5. Procedures for Discovery of Human Remains

Similarly, as discussed in the *Geology, Soils, & Seismicity* section of this checklist, the proposed repairs are not considered likely to result in Significant loss of paleontological resources, but the possibility of encountering fossil materials cannot be entirely ruled out. This is particularly true in the deeper portions of the Segment 100 excavations and in locations where an excavation needs to be widened needs to be widened beyond the original installation footprint, if any. Here, there is potential to encounter previously undisturbed substrate materials, and a correspondingly higher potential for impact. To address this, the City will adopt the following mitigation measures, described in detail in the *Geology, Soils, & Seismicity* section, to prevent the loss of scientific information and heritage value.

- GEO-1. Worker Awareness Training for Paleontological Resources
- GEO-2. Stop-Work, Evaluation, and Treatment in the Event of a Paleontological Find

With Mitigation Measures CUL-1 through CUL-5, GEO-1, and GEO-2 incorporated, impacts on historical resources (including archaeological resources) and paleontological resources would be reduced to a Less than Significant level. The projects' potential to eliminate important examples of the major periods of California history or prehistory would also be Less than Significant. No further analysis is warranted, and no additional mitigation is required.

## Potential Contributions to Cumulative Impacts

### CEQA Requirements

The state's *CEQA Guidelines* implicitly recognize that no project is implemented in a vacuum: a project's effects may combine with those of other past, present, and future projects to create an additive effect on the environment. Repeated small impacts over time due to a single project may also accumulate to create a larger impact. As a result, in addition to considering a proposed project's incremental (project-specific) outcomes (discussed in the preceding checklist sections), lead agencies are required to analyze *cumulative impacts*, which include:

- the combined impacts of multiple projects, including the proposed project (*CEQA Guidelines* 15355[b]), and
- the combined impact of repeated activities under a single project over time (*CEQA Guidelines* 15355[a])

A project's incremental (project-specific) impact may be individually Less than Significant, but become Significant when viewed in connection with the effects of other past, present, and future projects—that is, it may become *Cumulatively Considerable* in the larger context (*CEQA Guidelines* 15065[a][3]). Both types of impacts must be discussed in detail when the impact would be Significant and the project has the potential to make a *Cumulatively Considerable* contribution (*CEQA Guidelines* 15130).

Two approaches are permitted as the basis to identify cumulative impacts that warrant analysis

- a list of past, present, and probable future projects, including projects outside the control of the lead agency for the proposed project (*CEQA Guidelines* 15130[b][1][a]), or
- a summary of projections contained in an adopted local, regional, or statewide plan—such as a general plan, a regional transportation plan, or a greenhouse gas emissions reduction plan—or a prior environmental document prepared for such a plan (*CEQA Guidelines* 15130[b][1][B])

When the “list” approach is used, the lead agency must consider and define the appropriate geographic scope for analysis (*CEQA Guidelines* 15130[b][1][B][3]). Although not explicitly required by the *Guidelines*, this step also makes sense as the starting point for analysis using the “summary of plan projections” approach.

### Methods Used in Cumulative Impacts Analysis

The following analysis used the “summary” approach. This was identified as most appropriate because the summary approach requires a broad view of regional conditions, suitable for the resources (e.g., air quality, biological resources, cultural resources, hazardous materials contamination) most relevant to the projects' potential impacts. Additionally, in view of the short duration of work proposed at each of the project Segments,

the potential overlap if any, between the proposed repairs and other projects would be extremely limited, and Significant cumulative impacts are considered unlikely due to temporal overlap alone. As a result, the summary approach was felt to be more conservative.

Resources for which the proposed project would have No Impact were not considered in the cumulative impacts analysis, since the projects would have no potential either to contribute to, or to independently create, cumulative impacts on these resources. Based on findings of No Impact, as detailed in the respective checklist sections, the following resources were omitted from cumulative consideration.

- Agriculture & Forestry Resources
- Energy
- Land Use & Planning
- Mineral Resources
- Population & Housing
- Public Services
- Recreation
- Tribal Cultural Resources
- Utilities & Service Systems
- Wildfire

#### Potential to Contribute to Cumulative Impacts

Results of the cumulative impacts analysis are presented in detail in Table 3-9 and summarized below.

- With the Avoidance and Minimization Measures discussed in Section 2 and the mitigation identified in previous checklist sections incorporated, the proposed projects' contribution to the following existing Significant cumulative impacts would be Less than Cumulatively Considerable
  - Nonattainment of air quality standards
  - Decline in populations of special-status birds
  - Progressive loss of cultural resources
  - Topsoil loss (Segment 231 only)
  - GHG emissions
  - Hazardous materials contamination and related health and environmental risks
  - Groundwater contamination
  - Potential cumulative noise impacts due to overlap between work at Segments 231 – 233 and 242 with construction of the Related and/or SummerHill Homes redevelopment projects
  - Traffic congestion (VMT generation)
- The projects would have No Potential to contribute to the existing Significant cumulative impacts related to the following
  - Progressive habitat loss
  - Topsoil loss
  - Identified impairments of downstream surface water quality

Table 3-9. Cumulative Impacts Analysis

Resource	Area of Analysis		Significant Existing Cumulative Impact?	Analysis Needed		Discussion
	Areas Included	Rationale		Contribution to Existing Impact	Potential for New Impact	
Aesthetics	Immediate viewshed of repair Segments	Aesthetic values in incorporated areas are regulated at the local jurisdiction level, through the General Plan, Precise, Area, or Specific Plans, zoning ordinances, and other regulations and policies. As a result, aesthetic character and quality can vary substantially between adjacent communities, and even within a single jurisdiction, depending on permitted land uses and the governing plan document(s).	None identified. Aesthetic character and quality in the City have historically been controlled and maintained through the General Plan (City of Santa Clara 2010), Specific Plans, and zoning ordinance, which together provide a wide range of detailed standards and guidelines aimed at community character and aesthetics.		■	As discussed in the <i>Aesthetics</i> section of this checklist, the projects' only impact related to aesthetics would be the potential for very short-term, localized increases in glare generation and light spill during construction at each of the project Segments, due to <ul style="list-style-type: none"> <li>• reflections from glass and painted metal surfaces of construction vehicles and equipment</li> <li>• need for work lighting if night work is required</li> </ul> The proposed repairs would decrease the need for future maintenance along the project Segments; consequently, this type of short-term, localized increase in glare and light spill would be restricted to the very short duration of the construction work period at each of the project Segments. The projects would therefore have No Potential to create a new long-term cumulative impact related to light and glare generation. No further analysis of this topic is warranted, and no mitigation is required.
Air Quality	San Francisco Bay Area Air Basin (SFBAAB)	All Segments (and the entirety of the City) are located within the SFBAAB, which was defined based on a combination of political, geographic, and meteorological criteria to include both pollutant sources and receptors (see California Air Resources Board 2012, 2018). Air quality effects of more extensive and/or more prolonged projects are felt in downwind areas (the San Joaquin Valley Air Basin), but effects of small undertakings like the proposed repairs would be experienced primarily within the SFBAAB.	Yes. The SFBAAB is in nonattainment of the state (CAAQS) ozone and fine particulate matter (PM2.5) standards, marginal nonattainment of the federal (NAAQS) ozone standard, and moderate nonattainment of the federal PM2.5 standard. These represent Significant cumulative impacts on air quality.	■		The BAAQMD considers air quality degradation an inherently cumulative impact. Consistent with the BAAQMD's CEQA guidelines (Bay Area Air Quality Management District 2017a), this topic is analyzed at a cumulative level in the <i>Air Quality</i> section of this Initial Study checklist. Project contributions were found to be Less than Cumulatively Considerable during the construction period, with a potential for long-term Benefit due to a decreased need for maintenance at the project Segments over at least the next several decades. No further analysis is warranted, and no mitigation is required.
Biological Resources	South San Francisco Bay region	The location, nature, and extent of biological and jurisdictional habitat resources are controlled by physiography and climate, with a secondary overprint resulting from human influences via patterns of land development. As a result, habitats and patterns of species usage in the vicinity of the project Segments are interconnected with the larger habitat and land use mosaic in the south San Francisco Bay region.	Yes. Like other urbanized locations in California, the South Bay region has experienced substantial loss and degradation of natural habitats over the past 2 centuries, as a result of progressive development. This represents a Significant cumulative impact at the landscape or habitat level. Additional Significant cumulative impacts at the species level are considered to exist where individual plant and wildlife species have been identified as qualifying for federal or state special status.	■	■	<u>Contribution to Existing Impact</u> Analysis of contributions to existing Significant cumulative impacts on habitat availability and populations of special-status species focuses on the construction period, since the proposed repairs would decrease the need for future maintenance activity, reducing or avoiding the potential for long-term contributions to cumulative biological impacts by comparison with existing baseline conditions. As discussed under <i>Project Settings</i> in Section 2 of this Initial Study, and further in <i>Biological Resources</i> above, the proposed repair Segments are located in urbanized roadway corridors; the project alignments themselves are disturbed, graded, and/or paved and do not support natural habitat of any kind, although surrounding areas offer some limited habitat value. Impacts of the the proposed repairs would be confined to the immediate project alignments, and because the work focuses on subsurface sewer infrastructure, the projects would not change surface conditions over the long term. As a result, the proposed repairs would have No Impact related to loss or degradation of natural habitats and thus No Potential to contribute to the existing cumulative impact with regard to habitat loss. No further analysis of this topic is warranted, and no mitigation is required. The only special-status species considered likely to occur in the immediate vicinity of the repair Segments are birds: Cooper's Hawk, which may nest and forage around all of the Segments; Burrowing Owl, which may nest near Segments 231 – 232 and forage around all of the Lafayette Street Segments; American Peregrine Falcon, which is not expected to nest but may also forage near the Lafayette Street Segments and possibly also Segment 100; and multiple common species protected under the Migratory Bird Treaty Act. Construction would thus have the potential to disrupt nesting by Cooper's Hawk, Burrowing Owl, and various protected common bird species. However, as discussed in more detail in the <i>Biological Resources</i> section of this checklist, the City has identified and will adopt mitigation to protect nesting birds, their nests, eggs, and young. With these measures in place, impacts on special-status bird populations as a result of

Resource	Area of Analysis		Significant Existing Cumulative Impact?	Analysis Needed		Discussion
	Areas Included	Rationale		Contribution to Existing Impact	Potential for New Impact	
						<p>project construction are expected to be Less than Significant at the project-specific level, and the projects' potential to contribute to the existing cumulative impact with regard to decline of Cooper's Hawk and Burrowing Owl would also be Less than Cumulatively Considerable.</p> <p>The potential for disruption of foraging behavior was evaluated as Less than Significant at the project-specific level, because any birds discouraged from foraging in the vicinity of active work sites would be able to disperse to nearby areas where equivalent or better foraging opportunities are available. Construction-related foraging disturbance is therefore not expected to contribute to cumulative adverse effects on populations of any protected bird species.</p> <p>The projects' potential to contribute to the existing Significant cumulative impact with regard to decline of Cooper's Hawk and Burrowing Owl is accordingly evaluated as Less than Cumulatively Considerable overall. No further analysis is warranted, and no additional mitigation is required.</p> <p><u>Potential to Create New Impact</u></p> <p>Once the repairs are complete, normal operations would resume. The frequency of maintenance is expected to decrease, however, since the repairs would restore the integrity and function of the project Segments. The repairs would thus have No Potential to result in new cumulative impacts on biological resources. No further analysis is warranted, and no mitigation is required.</p>
Cultural Resources	South San Francisco Bay region and greater California	The presence or absence of cultural resources is independent of current political boundaries, reflecting instead past patterns of land use combined with complex factors that control resource preservation and loss over time. For a more comprehensive and conservative analysis, cumulative impacts on these resources were therefore addressed in the context of the greater South Bay region and California as a whole rather than focusing exclusively on the immediate vicinities of the project Segments or an area defined by current political boundaries.	<p>Yes.</p> <p>Urban/suburban expansion has substantially modified the Native American cultural legacy in the South Bay region and throughout California in the past 200 years. This includes culturally important sites, culturally important plant and wildlife resources, and traditional cultural practices. This is considered a Significant cumulative impact with regard to loss of cultural resources.</p>	■	N/A	<p><u>Contribution to Existing Impact</u></p> <p>As discussed in the <i>Cultural Resources</i> section of this checklist, the project Segments are not considered sensitive for archaeological resources, but where ground disturbance/excavation would be required, the potential for unanticipated finds, and associated disturbance or loss of resources, cannot be entirely ruled out. To address this potential, the City has committed to implement Mitigation Measure CUL-1 (Notice of Potential for Buried Cultural Resources in Construction Documents), Mitigation Measure CUL-2 (Retention of On-Call Archaeologist), Mitigation Measure CUL-3 (Worker Awareness Training for Cultural Resources), Mitigation Measure CUL-4 (Evaluation and Treatment of Unanticipated Archaeological Discoveries), and Mitigation Measure CUL-5 (Procedures for Discovery of Human Remains). With these measures incorporated, the projects' impacts on cultural resources would be Less than Significant at the incremental level, and their contribution, if any, to the existing cumulative impact with regard to loss of cultural resources would be Less than Cumulatively Considerable. No further analysis is warranted, and no additional mitigation is required.</p> <p><u>Potential to Create New Impact</u></p> <p>In the project region, this analysis does not apply to cultural resources, since a cumulative regional impact related to loss of cultural resources already exists. The projects' long-term incremental impacts on individual cultural resources, if any, would constitute contributions to the existing cumulative impact, rather than creating a new, separate cumulative impact. However, if anything, the proposed repairs would decrease the need for repairs (and associated ground disturbance and excavation) over at least the next several decades, reducing the potential for long-term contributions to cumulative cultural resources loss. No further analysis is warranted, and no additional mitigation is required.</p>
Geology & Soils	Greater San Francisco Bay area	Land use—which is a primary driver for both patterns of topsoil loss, and to the exposure of people and structures to seismic hazards—is regulated at the local jurisdiction level, but the impacts are felt regionally, at the landscape level. Accordingly, impacts related to soil resources and seismic hazards were	<p>Yes.</p> <p>Urbanization in the San Francisco Bay Area has resulted in progressive loss and unavailability of topsoil resources. This represents a Significant cumulative impact.</p> <p>Development in the seismically active San Francisco Bay Area has placed numerous structures and a large population at risk from earthquake effects. This also represents a</p>	■	N/A	<p><u>Contribution to Existing Impact</u></p> <p>Excavation would be required at Segment 100 for open cut replacement of the sewer line and for manhole replacement. More localized excavation would also be required at the other Segments (231 – 233 and 242) for manhole repairs.</p> <p>As noted in the <i>Geology, Soils, &amp; Seismicity</i> section of this checklist, Segments 100, 232, 233, and 242 are entirely within disturbed, graded, and paved areas that are considered extremely unlikely to preserve a topsoil layer. No Impact with regard to loss of topsoil is anticipated at these Segments, and these repairs would therefore have No Potential to contribute to cumulative level of topsoil loss. Accordingly, discussion below focuses on Segment 231.</p>

Resource	Area of Analysis		Significant Existing Cumulative Impact?	Analysis Needed		Discussion
	Areas Included	Rationale		Contribution to Existing Impact	Potential for New Impact	
		considered in the regional context of the greater Bay Area.	Significant cumulative impact. However, as discussed in the <i>Geology &amp; Soils</i> section of this checklist, the proposed repairs would have No Impact with regard to exposure of persons or structures to seismic hazards, and therefore No Potential to Contribute to the cumulative regional impact. No further analysis of this topic is warranted.			<p>The termini of Segment 231 are in unpaved areas where some topsoil is presumed to be present since there is vegetation. However, both termini of Segment 231 are in areas that have been graded and substantially disturbed for prior development; topsoil is unlikely to be intact and is probably also of limited quality. Moreover, excavation would be limited to a very small area in the immediate vicinity of existing SSMH 114-14 and SSMH 114-23, where prior disturbance has likely been greater as a result of sewer construction. As a result, loss of topsoil at Segment 231, if any, would be very limited and is considered Less than Significant at the project-specific level. The potential for topsoil loss at Segment 231 is also evaluated Less than Cumulatively Considerable, particularly as the vicinity of Segment 231 is extensively developed and set in an urbanized context where a return to open space or cultivation is not reasonably foreseeable. No further analysis is warranted, and no mitigation is required.</p> <p><u>Potential to Create New Impact</u></p> <p>In the project region, this analysis does not apply to geology and soils, since a cumulative regional impact related to topsoil loss already exists. Moreover, by decreasing the need for future maintenance along the project Segments (and particularly at Segment 231, where some topsoil may remain), the proposed repairs would reduce the potential for future topsoil loss. No further analysis is warranted.</p>
Greenhouse Gas Emissions	San Francisco Bay Area Air Basin and worldwide	Analysis of cumulative impacts related to GHG emissions considered emissions within the project vicinity and SFBAAB as a general baseline, within the larger context of a globalized impact.	Yes. A growing scientific and regulatory consensus recognizes GHG as a cumulative long-term concern at the local, national, and worldwide scales.	■	N/A	Similar to air quality degradation, GHG levels are an inherently cumulative impact. Consistent with the BAAQMD's CEQA guidelines (Bay Area Air Quality Management District 2017a), GHG emissions are analyzed at a cumulative level in the Greenhouse Gas Emissions section of this Initial Study checklist. Impacts related to GHG generation are considered Less than Significant at the project level, and because they are so far (4 orders of magnitude or more than 1,000x) below relevant thresholds, they are also evaluated as Less than Cumulatively Considerable. No further analysis is warranted, and no mitigation is required.
Hazards & Hazardous Materials	City of Santa Clara and neighboring areas	Hazardous materials contamination reflects past and current land use patterns, as well as topographic, climatic, hydrologic, and soils-related factors. For a more comprehensive assessment, analysis considered known hazardous materials across the City and in adjacent jurisdictions.	Yes. A number of known contaminated sites are present within City limits and the surrounding area. This is considered a cumulative impact since the existing level and distribution of contamination is the result of a long history of agricultural and urban land uses, comprising multiple separate activities over a period of decades. It is considered a Significant cumulative impact due to the documented risk soil and water contamination presents for human and environmental health.	■	■	<p><u>Contribution to Existing Impact</u></p> <p>As described in the <i>Hazards &amp; Hazardous Materials</i> section of this checklist, repair work at all of the Segments would require the use of substances that qualify as hazardous materials, but all such substances would be handled and disposed in strict accordance with good construction practices, applicable federal and state regulations, and the City's Standard Specifications for Public Works Construction. With adherence to the City's Standard Specifications and good construction practices, impacts related to hazardous materials use and handling during construction are expected to be Less than Significant at the incremental level, and are also considered Less than Cumulatively Considerable. No further analysis is warranted, and no mitigation is required.</p> <p>Additionally, as itemized in Table 3-7, all of the proposed repair Segments are located in areas with known or potential hazardous materials contamination. Ground disturbance would thus have some potential to increase worker, public, and/or environmental exposure to existing soil and/or groundwater contamination, and/or soil vapors. The City has adopted mitigation to address this concern (see Mitigation Measure HAZ-1, Contaminated Groundwater, Soil, and Soil Vapor Protection). With this measure in place, risks would be addressed consistent with current best practices and prevailing regulatory standards. Residual impacts, if any, are expected to be Less than Significant at the incremental level and are also considered Less than Cumulatively Considerable. No further analysis is warranted, and no additional mitigation is required.</p> <p>Once the repairs at each Segment have been completed, normal operations and maintenance would resume. There would be no long-term increase in the use of substances that qualify as hazardous materials and No Impact at the incremental level related to increased hazard to the public or the environment due to routine transport, use, or disposal of hazardous materials. Rather, because the proposed repairs would decrease the need for ongoing maintenance, there would likely be a long-term Benefit with regard to the use and disposal of hazardous substances. The projects are therefore considered to have No Potential to Contribute to the existing cumulative impact with regard to hazardous materials contamination over the long term. No further analysis is warranted, and no mitigation is required.</p>

Resource	Area of Analysis		Significant Existing Cumulative Impact?	Analysis Needed		Discussion
	Areas Included	Rationale		Contribution to Existing Impact	Potential for New Impact	
						<p><u>Potential to Create New Impact</u></p> <p>Because the proposed repairs would decrease the need for future maintenance that could require the use of hazardous substances along the project Segments by comparison with existing conditions, they are considered to have No Potential to independently create a new cumulative impact with regard to hazardous materials contamination. No further analysis is warranted, and no mitigation is required.</p>
Hydrology & Water Quality	<p><i>Surface water:</i> Guadalupe River watershed</p> <p><i>Groundwater:</i> Santa Clara subbasin</p>	<p><i>Surface Water.</i> All of the proposed repair Segments are located within the Guadalupe River watershed. Project contributions to cumulative impacts on surface drainage and surface water quality would be limited to water bodies within this watershed, and downstream receiving waters.</p> <p><i>Groundwater.</i> The project alignment overlies the Santa Clara Sub-Basin of the Santa Clara Valley Groundwater Basin. Contributions to cumulative impacts on groundwater quality would be limited to the sub-basin.</p>	<p><i>Surface Water.</i> Yes.</p> <p>The State Water Resources Control Board (SWRCB) is charged with assessing water quality and identifying water bodies under state jurisdiction that are “impaired” by the presence of pollutants such that water quality standards are not met. The following impairments relevant to the project Segments have been identified (State Water Resources Control Board 2018).</p> <ul style="list-style-type: none"> <li>• Guadalupe River – diazinon, mercury, trash</li> <li>• South San Francisco Bay – chlordane, dieldrin, dichlorodiphenyl-trichloroethane (DDT), dioxin compounds, furan compounds, invasive species, mercury, polychlorinated biphenyls (PCBs), selenium</li> </ul> <p>Each of these water quality impairments represents a Significant existing cumulative impact.</p> <p><i>Groundwater.</i> Yes.</p> <p>Valley Water (formerly the Santa Clara Valley Water District) manages groundwater in the project region and has monitored groundwater quality since the 1980s. Groundwater quality in the Santa Clara Subbasin is generally very good; exceedance of California and federal drinking water Maximum Contaminant Levels is a rare occurrence overall (Valley Water 2021). However, numerous sites with documented groundwater contamination are present within the City and the Sub-Basin as a whole, representing Significant localized cumulative impacts on groundwater quality.</p>	■	■	<p><u>Contribution to Existing Impacts</u></p> <p><i>Surface Water.</i> The proposed repairs would involve the use of hazardous and potentially contaminating substances, as discussed in the previous item, but would not require the use of any of the substances for which impairments have been identified in downstream receiving waters. Debris and trash generated at the work sites would be strictly managed under the City’s Standard Specifications. During construction, the projects are thus expected to have No Potential to contribute to the existing impairments identified for the Guadalupe River or South San Francisco Bay. No further analysis is warranted, and no mitigation is required.</p> <p>Over the long term, the repairs would decrease the need for maintenance along the project Segments, and sanitary sewer operations and maintenance in general do not use any of the substances for which the relevant water bodies are identified as impaired. There should thus be No Potential to contribute to the identified Significant cumulative surface water quality impacts once the repairs are complete. No further analysis is warranted, and no mitigation is required.</p> <p><i>Groundwater.</i> As discussed in the <i>Hydrology &amp; Water Quality</i> section of this checklist, the use of hazardous substances during repairs would be strictly regulated by the City’s Standard Specifications. The projects’ potential to contribute to the existing Significant cumulative groundwater quality impacts associated with the documented occurrences of groundwater contamination in the project region is therefore evaluated as Less than Significant at the project-specific level, and is also considered Less than Cumulatively Considerable. No further analysis is warranted, and no mitigation is required.</p> <p><u>Potential to Create New Impact</u></p> <p>Over the long term, the proposed repairs would provide a Benefit to surface and groundwater quality by restoring the integrity of the project Segments, reducing the need for ongoing maintenance and preventing leaks, spills, and overflows. The repairs would therefore have No Potential to independently create a new cumulative impact on water quality. No further analysis is warranted and no mitigation is required.</p>

Resource	Area of Analysis		Significant Existing Cumulative Impact?	Analysis Needed		Discussion
	Areas Included	Rationale		Contribution to Existing Impact	Potential for New Impact	
Noise	Vicinity of proposed repair Segments	Noise disturbance is a localized impact, limited to the immediate proximity of the noise source	<p>None identified. Noise levels are regulated by City ordinance, except in industrial-zoned areas, which are exempt from limits (see discussion in <i>Noise</i> section of this checklist).</p> <p>Segment 100 is located in an industrial area. Noise disturbance has not been identified as a concern in the vicinity of Segments 231 – 233, which are in an area that is subject to City ambient noise limits but does not currently support noise-sensitive land uses.</p> <p>Note however there may be some potential for construction at Segments 231 – 233 and Segment 242 to overlap with the initial phases of work on the Related redevelopment project at the former Santa Clara Golf &amp; Tennis club course and/or the SummerHill Homes project on Calle Del Mundo just east of Lafayette Street. If this occurs, a cumulative construction noise impact would result, and may have potential to rise to a Significant level.</p>		■	<p>As discussed in the <i>Noise</i> section of this checklist, construction at each of the proposed repair Segments would generate noise. If work at Segments 231 – 233 or Segment 242 overlaps with construction at the Related and/or SummerHill Homes projects, the proposed repairs would contribute to a cumulative construction noise impact that (as noted to the left) may have some potential to rise to a Significant level. However, the contribution of the proposed sewer repairs would be very short-term (about 10 days total for Segments 231 – 233 and another 4 days for Segment 242; see Table 2-4). This is considered minor in the context of the Related and SummerHill Homes projects, whose construction durations would be much longer. Moreover, although the area is subject to noise limits due to zoning that anticipates the future presence of noise-sensitive uses such as residences, there are currently no noise-sensitive uses in the vicinity of the proposed projects on Lafayette Street. In this context, the short-duration contributions of the proposed sewer repairs to any future cumulative construction noise impact are evaluated as Less than Cumulatively Considerable. No further analysis is warranted, and no mitigation is required.</p> <p>Over the long-term, all of the proposed projects would reduce the need for future maintenance at the repaired Segments and thus are expected to decrease the likelihood of construction noise generation in these areas. As a result, the projects are considered to have No Potential to result in long-term cumulative impacts related to repeated noise generation.</p> <p>No further analysis of long-term cumulative impacts is warranted, and no mitigation is required.</p>
Transportation	City of Santa Clara and surrounding area	In the Bay Area, transportation effects are felt locally, but influenced by wider patterns of land use and transportation planning, housing cost and availability, and loci of employment. Cumulative transportation impacts were therefore considered in a regional context, but with a focus on local effects in the vicinity of the repair Segments	<p>Possibly.</p> <p>To the extent that existing levels of development within the City have created areas of traffic congestion, it could be argued that the VMT generated by existing development represent a Significant cumulative impact on transportation system function.</p>	■	■	<p><u>Contribution to Existing Impact</u></p> <p>Construction of the proposed repairs would result in a minor, short-term increase in Citywide VMT due to contractor mobilization and demobilization, worker commute trips, and materials deliveries. Because the increase would be minor and of very short duration, it is considered Less than Significant at the project-specific level and is also evaluated as Less than Cumulatively Considerable. No further analysis is warranted, and no mitigation is required.</p> <p>Once the proposed repairs are complete, normal O&amp;M would resume, likely at a reduced level due to the improved condition of the project Segments and the long lifespan of the proposed repair techniques. There would be no long-term increase in VMT, and could be a slight long-term decrease due to the anticipated decrease in maintenance frequency. Thus, over the long term, the proposed repairs would have No Potential to contribute to any existing cumulative VMT-related impact. No further analysis is warranted, and no mitigation is required.</p> <p><u>Potential to Create New Impact</u></p> <p>Because the proposed repairs would decrease the need for future maintenance/repair of the project Segments, they would reduce long-term (maintenance-related) VMT. The projects would therefore have No Potential to independently create a new cumulative impact related to VMT generation. No further analysis is warranted, and no mitigation is required.</p>

- The proposed repairs would have No Potential to independently result in new cumulative impacts on any resource over the long term

Consequently, with the identified Avoidance and Minimization Measures and mitigation measures incorporated, the proposed projects' potential to result in impacts that are individually limited but cumulatively considerable is evaluated as Less than Significant. No further analysis is warranted, and no additional mitigation is required.

### Potential for Substantial Adverse Effects on Human Beings

As described in Section 2 of this Initial Study and in the checklist sections above, all repair work would comply with the City's Standard Specifications, including the following requirements.

- A Traffic Control and Detour Plan that provides safe temporary detours for vehicles and pedestrians as necessary and maintains ingress/egress to adjacent properties
- Compliance with all applicable federal and state regulations for hazardous materials use, handling, and disposal
- Measures to reduce construction noise disturbance, such as avoiding unnecessary noise, restricting certain noise-generating activities to specific hours, ensuring that all construction equipment and vehicles are well maintained and equipped with properly installed engine mufflers, operating equipment in the manner that generates the least noise possible while still accomplishing the needed work efficiently, and using noise screens or barriers when they offer an effective means of reducing noise disturbance to the occupants of neighboring buildings
- Construction dust control
- Compliance with all applicable solid waste handling and disposal statutes

The City has also committed to Avoidance and Minimization Measures to further reduce dust generation; prevent potential exposure to contaminated soil and groundwater and soil vapor; and reduce the potential for exposure to styrene compounds during CIPP lining. In addition, the City will adopt mitigation (see Mitigation Measure HAZ-1) to reduce the potential for human and environmental exposure to hazardous materials contamination in the vicinity of the Segments proposed for repair.

With all of these measures in place, the projects' short- and long-term potential to result in adverse effects on human beings is evaluated as Less than Significant. Moreover, by improving the function of the City's sanitary sewer system and reducing risks of leaks, spills, and overflows, the proposed repairs would be protective of human health and safety over the long term. No further analysis is warranted and no additional mitigation is required.

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# Acronyms & Abbreviations

1,1,2-TCA	1,1,2-trichloroethane
ACE	Altamont Corridor Express
AMP	Archaeological Monitoring Plan
ASTM	ASTM International (formerly American Society for Testing and Materials)
ATP	Archaeological Treatment Plan
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
BMX	bicycle motocross
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCTV	closed circuit television
CEQA	California Environmental Quality Act
CH <sub>4</sub>	methane
CHRIS/NWIC	California Historical Resources Information System, Northwest Information Center
CIPP	cured-in-place-pipe (pipe lining technique)
cis-1,2-DCE	cis-1,2-dichloroethylene
City	City of Santa Clara
CNDDB	DFW's California Natural Diversity Database
CNEL	Community Noise Equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalents
CRHR	California Register of Historical Resources
dB	decibel, decibels
DCE	dichloroethene
DFW	California Department of Fish and Wildlife
DPS	Distinct Population Segment
DTSC	State Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
ESL	Environmental Screening Level established by RWQCB
FAA	Federal Aviation Administration
FAR	floor area ratio
FMMP	LRPD's Farmland Mapping and Monitoring Program
FRA	Federal Responsibility Area (wildland fire prevention/suppression responsibility)
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
GTP	global temperature potential
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
IPaC	USFWS's Information Planning and Consultation System
IPCC	Intergovernmental Panel on Climate Change
LOS	level of service
LRA	Local Responsibility Area (wildland fire prevention/suppression responsibility)
L <sub>dn</sub>	day-night noise level
LF	linear feet
LRPD	Land Resources Protection Division of state Department of Conservation
LUST	leaking underground storage tank

µg/m <sup>3</sup>	micrograms per cubic meter
MRZ	Mineral Resource Zone
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NASSCO	National Association of Sewer Service Companies
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	oxides of nitrogen
NRHP	National Register of Historic Places
O <sub>3</sub>	ozone
ORC	oxygen release compound
OSHA	federal Occupational Safety and Health Administration
PACP	NASSCO's Pipeline Assessment Certification Program
PAHs	polynuclear aromatic hydrocarbons
PAL	Police Activities League
Pb	airborne lead
PCMP	Post-Closure Maintenance Plan
PG	licensed Professional Geologist
PM	inhalable particulate matter
PM <sub>2.5</sub>	inhalable particulate matter less than 2.5 microns (0.0025 millimeter) in diameter
PM <sub>10</sub>	inhalable particulate matter less than 10 microns (0.01 millimeter) in diameter
ppb	parts per billion by volume
PPEs	personal protective equipment
ppm	parts per million by volume
PVC	polyvinyl chloride
R&D	research and development
RCP	reinforced concrete pipe
ROG	reactive organic gas
ROW	right-of-way
RWQCB	San Francisco Bay Regional Water Quality Control Board
SO <sub>2</sub>	sulfur dioxide
TAC	toxic air contaminant
TCE	trichloroethylene
TDM	Transportation Demand Management
TPH	total petroleum hydrocarbons
TPHd	total petroleum hydrocarbons as diesel
TPHg	total petroleum hydrocarbons as gasoline
TPHmo	total petroleum hydrocarbons as motor oil
USFWS	U.S. Fish and Wildlife Service
SIP	State Implementation Plan (air quality)
SJC	Norman Y. Mineta San Jose International Airport
SRA	State Responsibility Area (wildland fire prevention/suppression responsibility)
SO <sub>2</sub>	sulfur dioxide
SR	State Route
SSMH	sanitary sewer manhole
UPRR	Union Pacific Rail Company
UST	underground storage tank
VCP	vitrified clay pipe
VMT	vehicle miles traveled
VOC	volatile organic compound
VTA	Santa Clara Valley Transportation Authority
Williamson Act	California Land Conservation Act of 1965

## **Appendix A**

# Air Quality & Greenhouse Gas Emissions Modeling Results



TO: Anna Busing, Ph.D., P.G.  
FROM: Todd Tamura, QEP  
RE: Documentation for Air/GHG Emissions Estimates  
DATE: October 21, 2022

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This memo provides details regarding the air and GHG emissions information summarized in the IS/MND.

- CAPCOA's CalEEMod® software<sup>1</sup> was used to calculate emissions from most sources, but does not include algorithms to calculate emissions from all the CIPP activities.
- For the CIPP activities,
  - Emissions from off-road construction equipment were calculated using the same formulas used by CalEEMod®
  - Emissions from the CIPP boiler were calculated using standard boiler emission factors from US EPA's AP-42 publication<sup>2</sup>
  - No emission inventory publications contain emission factors for CIPP resin curing;<sup>3</sup> quantification of emissions was instead evaluated based on published studies, as described in more detail below.

#### Key CalEEMod® model inputs

Quantitative BAAQMD significance thresholds for emissions of air pollutants are in units of lb/day, and full CalEEMod® model outputs for daily emissions are included in Attachment A to this appendix. Key input parameters are shown in Table 1 on the following page. Technically, work being conducted at each segment is a separate project under CEQA; however, for simplicity and conservatism, we combined emissions from all of the segments. Default equipment sizes and load factors were used except with regard to the gensets (for which approximate size information was available).

CalEEMod® estimates emissions for a variety of emissions sources, including:

- “off-road” construction equipment,
- on-road vehicles (including haul trucks, worker vehicles, etc.),
- fugitive dust emissions from transferring cut-and-fill material, and
- asphalt paving emissions.

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<sup>1</sup> This analysis used the latest version of CalEEMod®, Version 2020.4.0.

<sup>2</sup> US EPA, “Fuel Oil Combustion”, Section 1.3 of “Compilation of Air Pollution Emission Factors, Volume I: Stationary Point and Area Sources”, AP-42, May 2010.

<sup>3</sup> US EPA's AP-42 publication does include a section that estimates emissions from polystyrene *manufacturing*, but (a) that process is substantially different than CIPP lining and (b) emissions from the manufacturing plants are controlled substantially by condensers, and therefore the emission factors are not applicable to CIPP lining work.

The results summary in Table 2 illustrates that NO<sub>x</sub> emissions from the off-road equipment (for which emissions controls aren't as stringent as for on-road vehicles) dominate the overall emissions but are still well below significance thresholds.

Table 1. Key input assumptions for CalEEMod® runs.

<b>Construction Phases:</b>						
Phase	Modeled as (CalEEMod Phase)	Total Days	Qty of matl loaded into trucks	Acres Graded	Truck Trip (1- way) Dist., mi	
Open cut excavation/pipe/lay/backfill	Site Preparation	9	222 cy	N/A	20	
Open cut paving	Paving	1	N/A	N/A	N/A	
CIPP Lining	N/A - off-model	14	N/A	N/A	N/A	
Manhole Removal and Replacement	Demolition	2	10 cy	N/A	20	
Manhole Cone Replacement	Demolition	1	10 cy	N/A	20	
Scheduling/assumption for worst-case CalEEMod day: all phases except paving overlap						
				Hrs/ Day	hp	Load Factor
<b>OffRoad Equipment:</b>						
Open cut excavation/pipe/lay/backfill	Excavators		2	8	158	0.38
	Generators		1	8	613	0.74
	Air Compressors		1	8	158	0.48
	Tractors/Loaders/Backhoes		1	8	97	0.37
	Skid-Steer Loaders		1	8	65	0.37
	Plate Compactors		2	8	8	0.43
Open cut paving	Concrete saws		1	8	81	0.73
	Rolling compactor		1	8	8	0.43
Manhole Removal and Replacement	Concrete saws		1	8	81	0.73
	Tractors/Loaders/Backhoes		2	6	97	0.37
	Skid-steer loaders		1	8	65	0.37
Manhole Cone Replacement	Concrete saws		1	8	81	0.73
	Tractors/Loaders/Backhoes		1	8	97	0.37
	Skid-Steer Loaders		1	8	65	0.37

Table 2. Summary of CalEEMod® Results and context

	ROG (lb/day)	NO <sub>x</sub> (lb/day)	Exhaust PM* (lb/day)
Off-road equipment			
Open cut work	2.5	20.3	0.8
Open cut paving	0.4	3.1	0.2
Manhole work	0.7	6.2	0.3
Manhole cone work	0.6	5.4	0.3
All other sources (total)	0.1	1.0	0.01
Total (potential)**	3.8	32.9	1.3
BAAQMD Significance Threshold	54	54	54 (PM-2.5) 82 (PM-10)

\*Values shown are PM-10; PM-2.5 is always a subset of PM-10.

\*\*Based on a conservative assumption that open cut work, manhole work, and manhole cone work all occurred on the same day.

## CIPP Activities

CIPP emissions sources include:

- (1) Offroad engines, which were identified as being a backhoe (“for general use”, not excavation) and two sewage/trash pumps  $\approx$  12 hp each;<sup>4</sup>
- (2) A truck-mounted CIPP boiler, estimated to have heat input rate of 10 MMBtu/hr (equivalent to roughly 300 boiler hp); and
- (3) Emissions from the CIPP resin curing itself.

As mentioned previously, emission inventory models and publications have established methods for estimating (1) and (2).

It has been recognized for many years that there are also emissions from (3), but quantification of these emissions is not covered in emissions inventory references. These emissions are difficult to quantify in real-world settings. We are aware of two studies/sets of studies that have been done—each of which has different shortcomings—with widely disparate results.

One study/set of studies was conducted by a Purdue University-based group estimated the extent of volatilization by weighing 100-gram samples before and after curing in an oven: i.e.,

- A 2020 study measured 8.87% volatilization from the 100-gram sample that was vacuum-cured and estimated emissions from real-world CIPP by multiplying that factor by real-world resin usage data (ranging from 68,000 kg to 122 million kg).<sup>5</sup> Researchers acknowledged that they needed to cure the sample at a slightly higher temperature for a slightly longer period of time than the manufacturer recommended (since the researchers identified that the material did not harden at the manufacturer-recommended curing conditions).<sup>6</sup>
- A subsequent 2022 study looked at different resin types and different operating conditions (including both vacuum and ambient-pressure curing situations) and measured volatilization ranging from less than 1% (for non-styrene resins) to 8.8-26.4% (for styrene resins),<sup>7</sup> noting that “temperature gradients through the material during [curing] may be quite significant and should be further investigated” and that range of volatilization values for styrene resins depended on the amount of initiator used.

Other studies by the Purdue group had identified styrene as the principle component in the CIPP vent plumes, and this was also qualitatively supported by data identifying styrene-like odors.<sup>8</sup>

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<sup>4</sup> Size estimate is based on the description of these being “Honda 4-inch 433 [gpm] or similar”

<sup>5</sup> Teimouri Sendesi et al. (2020), Supplementary Material, Table S2.

<sup>6</sup> Specifically, the 8.87% value is based on 65.5 °C for 55 minutes rather than 60 °C for 45 minutes.

<sup>7</sup> Noh et al., *Journal of Cleaner Production*, 2022, 356, 131803.

<sup>8</sup> e.g., Teimouri Sendesi et al. (2017), “Worksite Chemical Air Emissions and Worker Exposure during Sanitary Sewer and Stormwater Pipe Rehabilitation Using Cured-in-Place Pipe (CIPP)”, *Environ. Sci. Technol. Lett.* 2017, 4, 325-333; Ra et al., *Journal of Hazardous Materials* 371 (2019) 540-549

(<https://doi.org/10.1016/j.jhazmat.2019.02.097>)

Principle downsides of these studies include but are not limited to (1) the fact that the 100-gram samples tested were many of orders of magnitude smaller than the materials used for real-world CIPP, (2) the fact that resin was applied with a stick and a roller rather than using the techniques actually used in CIPP; and (3) the fact that the dry-oven curing technique of the flat square is substantially different from the real-world steam drying of the tubular CIPP.

A separate study of CIPP emissions conducted by the Trenchless Technology Center for the National Association of Sewer Service Companies (NASSCO) took measurements of styrene emissions from six actual CIPP project vents, modeled dispersion, and compared the dispersion modeling results to measurements taken further downwind.<sup>9</sup> The measured emissions rates were identified as ranging from 0.00001 to 0.069 g/s (0.00008 to 0.55 lb/hr) and then were adjusted to 0.01 to 0.18 g/s (0.8 to 1.4 lb/hr) to better fit the dispersion modeling results.<sup>10</sup> Principle downsides of this study include but are not limited to the following:

1. Typically, emissions are the product of in-stack concentrations and volumetric flow through the stack/vent, measured using EPA source testing methods (e.g., those in 40 CFR 60 Appendix A). In this case, it appears that concentrations were measured downstream of the stack exit (using non-isokinetic methods in a vent where droplets were present) and volumetric flow was measured with a VelociCalc® anemometer, which will be subject to substantially higher error, in part because it is being used outside the vent pipe.
2. The dispersion modeling upon which the results are based is highly dependent on actual (surface-level) meteorology and surface roughness (which is not easily quantified); however, in this study, the local meteorology was not measured, and the inputs to the model were from the nearest meteorological stations (which are typically at airports, 10 meters off the ground).

The results differ by more than an order of magnitude. If the lowest Purdue results for the styrene resins were assumed to be applicable to real-world CIPP, and emissions from these projects were calculated based on those results, the emissions would easily exceed BAAQMD significance thresholds for VOC as well as BAAQMD's corresponding TAC trigger threshold for styrene of 9.3 lb/hr. If the highest NASSCO emissions rate (even the adjusted one) were used, emissions would be well below those BAAQMD thresholds. Quantifying emissions from real-world CIPP projects would appear to border on the CEQA prohibition on "speculation" (14 CCR 15145). However, if non-styrene resins were used and the (relatively conservative) Purdue emissions rate of 1% were assumed, the estimate of CIPP resin emissions would be approximately 16 lb/day, well below the BAAQMD significance threshold.

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<sup>9</sup> Matthews et al., "NASSCO CIPP Emissions Phase 2: Evaluation of Air Emissions from Polyester Resin CIPP with Steam Cure," Final Report by Trenchless Technology Center for the National Association of Sewer Service Companies (NASSCO), February 2020, available from [https://live-nassco.pantheonsite.io/wp-content/uploads/2021/04/NASSCO\\_CIPP\\_Phase\\_II\\_Final-Report-Feb-2020-1.pdf](https://live-nassco.pantheonsite.io/wp-content/uploads/2021/04/NASSCO_CIPP_Phase_II_Final-Report-Feb-2020-1.pdf).

<sup>10</sup> Ibid., p. 42.

Table 3. Summary of CIPP combustion emissions

	ROG (lb/day)	NO <sub>x</sub> (lb/day)	Exhaust PM* (lb/day)
Off-road equipment	0.4	3.1	0.15
CIPP boiler	0.2	8.6	1.4
Resin (non-styrene)	16	0	negligible**
Total CIPP emissions	16.6	11.6	1.6
BAAQMD Significance Threshold	54	54	54 (PM-2.5) 82 (PM-10)

\*Values shown are PM-10; PM-2.5 is always a subset of PM-10.

### Localized impacts from CIPP lining

Thousands of CIPP projects have occurred over the course of decades; however, they have not universally occurred without incident. The Purdue researchers have identified that “CIPP-induced air pollution has been detected in more than 130 incidents associated with environmental degradation and risks of the health and safety of workers and the public”<sup>11</sup> and this figure has also been cited as “130 CIPP exposure incidents” in a recent California Department of Public Health (CDPH) Safety Alert.<sup>12</sup> The actual listings of incidents<sup>13</sup> include several reports that focus on odor rather than health impacts,<sup>14</sup> but many also document health impacts and hospitalizations, and I do not consider the potential for these localized effects to be “speculative”. Two primary exposure routes have been identified: (1) exposure to hydrocarbons that are actively vented aboveground from CIPP steam vents, and (2) exposure due to subsurface migration into buildings (including but not limited to leakage from laterals into basement cracks and drains).

For the first exposure route, distance from the vents to personnel is an important factor; while the list of incidents mentioned above does not include comprehensive information regarding receptor distances, the descriptions for some of the incidents indicate that they were in the vicinity of

<sup>11</sup> Teimouri Sendesi et al., *Environ. Sci.: Processes Impacts*, 2020, **22**, 1828 (quotation from p. 1829).

<sup>12</sup> [California Department of Public Health, “Safety Alert: Cure-In-Place Pipe \(CIPP\) Vapor Migration into Buildings”, May 2020.](https://www.cdph.ca.gov/Programs/CCDC/DCDC/DCDC/Pages/SafetyAlert.aspx?ItemID=15287) Available from <https://www.cdph.ca.gov/Programs/CCDC/DCDC/DCDC/Pages/SafetyAlert.aspx?ItemID=15287>

<sup>13</sup> Teimouri Sendesi et al., “List of reported CIPP caused air contamination incidents found by the authors and styrene concentration reported in air”, Table S1 in Supplementary Material to *Environ. Sci. Technol. Lett.* 2017, **4**, 325–333 (DOI: [10.1021/acs.estlett.7b00237](https://doi.org/10.1021/acs.estlett.7b00237)); Ra et al., “List of CIPP associated air contamination incidents found by authors not included in the 59 incidents previously reported by Teimouri et al. (2017) in their Supplementary Information file”, Table SM1 in Supplementary Material to *Journal of Hazardous Materials* 371 (2019) 540-549 (<https://doi.org/10.1016/j.jhazmat.2019.02.097>), Teimouri Sendesi et al., “List of CIPP associated air contamination incidents found by authors not included in the 59 incidents reported by Teimouri et al. (2017) and 45 incidents reported by Ra et al. (2019) in their Supplementary Information files”, Table S1 in Supplementary Material to *Environ. Sci.: Processes Impacts*, 2020, **22**, 1828.

<sup>14</sup> For example, the “incidents” listed by Ra et al. (2019) include one that reads “During installation of lining from MH-5 to MH-6 we received 2 complaints of odor from properties located to the west of the main entrance. Readings were taken inside the properties with the GasAlertMicro5 PID and recorded levels of 0 ppm” and another that reads “FOIA/MEDIA REPORT: Restaurant reported an ‘unusual odor in bathroom’ and fire department responded as a hazmat investigation. Fire department observed workers relining pipes nearby and confirmed that the odor in the building was from the pipe relining work.”

residential neighborhoods or schools (and some of the incidents were also for workers, with measurements taken just 20 feet from vents). A recent industry study of this exposure route recommended “that a conservative perimeter of 15-ft be implemented around exhaust manholes and emission stacks during curing”.<sup>15</sup> In contrast, the projects being proposed here have significant setback distances (several hundred feet away from the nearest receptors, which are also not residences) and workers will follow recommended and prescribed practices for personal protection.

The second exposure route involves subsurface migration into buildings. For example, the CDPH Safety Alert refers to “a large diameter CIPP sewer line [that resulted] in installation vapors migrating into an office building.... Styrene was measured for up to three months following the CIPP installation.” This appears to be referring to a 2005 study involving measurements taken over the course of three months (and building occupants vacating the building and having a workplace accommodation over the course of approximately three months).<sup>16</sup> In that case, CIPP was conducted on a large-diameter brick-lined sewer line under an old brewery building that had been converted into an office complex; the report noted that “According to the Milwaukee Health Department, styrene odor in buildings had been associated with some re-lining projects in the past, but typically would last only a couple of days. In this case, the large diameter of the line (60 inches), its presence directly under the building, and its brick construction, may have contributed to greater vapor entry than in the past.”<sup>17</sup>

The CIPP work for these repairs:

- is in relatively isolated areas that are a considerable distance away from potential building receptors, and is in sewer main segments that do not have laterals;
- will have vents at the ends of lines (and will be plugged at each end before lining), as recommended by CDPH; and
- will follow NASSCO’s 2020 “Guideline for the Safe Use and Handling of Styrene-Based Resins in Cured-in-Place Pipe”.<sup>18</sup>

In addition, per CDPH recommendations,<sup>19</sup> it is our understanding that for these projects the City will:

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<sup>15</sup> Matthews et al., p. 9.

<sup>16</sup> Wisconsin Department of Health and Family Services, “Health Consultation: Schlitz Park Office Building, Milwaukee, Milwaukee County, Wisconsin”, prepared by Wisconsin DHFS Under Cooperative Agreement with the U.S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry, Sept. 13, 2005.

<sup>17</sup> Ibid., p. 1.

<sup>18</sup> “Guideline for the Safe Use and Handling of Styrene-Based Resins in Cured-in-Place Pipe”, published by NASSCO, October 2020. Available from [https://www.nassco.org/wp-content/uploads/2021/02/Safe-Handling-and-Use-of-Styrene\\_Specification-Guideline--2020-2.pdf](https://www.nassco.org/wp-content/uploads/2021/02/Safe-Handling-and-Use-of-Styrene_Specification-Guideline--2020-2.pdf).

<sup>19</sup> An additional CDPH recommendation was to “Install a cleanout as described in ASTM F2561-11. It allows the contractor to temporarily plug the lateral service to prevent vapor migration and contaminated discharge water into the lateral.” However, the latest version of that ASTM standard (F2561-20) identifies that it is “for reconstruction of a sewer service lateral pipe having an inner diameter of 3 to 12 in. (7.6 to 30.5 cm) and its connection to the main pipe having an inner diameter of 6 to 24 in. (15.2 to 61.0 cm)” and this work (a) does not involve laterals and (b) the main line is larger than 24 inches.

- Provide information to the nearest residents and workplaces before sewer rehabilitation begins on the potential for vapor intrusion into the building with instructions to seek medical attention if exposure is suspected;
- Instruct those same people to leave the building and contact the fire department if vapors/odors have entered the building;
- Coordinate with local environmental and/or public health agencies to provide a contact number if odors are detected during or after hours; and
- Document odor complaints and conduct indoor air monitoring if health symptoms are identified.

It is also worth pointing out the odor threshold of styrene is below the health impacts thresholds: i.e., EPA has identified an odor threshold of 0.3 ppmv, whereas California OEHHA identifies a 1-hour average Reference Exposure Level of 5 ppmv,<sup>20</sup> and EPA identifies a No Observed Adverse Effects Level (NOAEL) of 7.8 ppmv and regulatory/advisory values ranging from 20 to 690 ppmv.<sup>21</sup>

Since most if not all of the odor issues that have arisen for CIPP projects have been identified as being associated with styrene, we recommend that this project will also evaluate the technical and economic feasibility of using non-styrene CIPP resins.

### GHG Emissions

As identified in BAAQMD’s CEQA Thresholds and Guidelines Update,

“There is no proposed construction-related climate impact threshold at this time. Greenhouse gas (GHG) emissions from construction represent a very small portion of a project’s lifetime GHG emissions. The proposed thresholds for land use projects are designed to address operational GHG emissions which represent the vast majority of project GHG emissions.”<sup>22</sup>

That being said, for the sake of providing context, we have calculated one-time (temporary) CO<sub>2e</sub> emissions from the abovementioned *construction* projects (in aggregate) using the same methodologies identified in the air quality analysis above and compared them to the *annual* CO<sub>2e</sub> significance thresholds (metric tonnes CO<sub>2e</sub> per year) that BAAQMD has previously identified for the *operation* of projects:

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<sup>20</sup> Office of Environmental Health Hazard Assessment, “Air Toxics Hot Spots Risk Assessment Guidelines, Technical Support Document For the Derivation of Noncancer Reference Exposure Levels, June 2008. The listed value of 21,000 µg/m<sup>3</sup> is equivalent to approximately 5 ppmv.

<sup>21</sup> EPA, “Styrene”, available at [https://www.epa.gov/sites/default/files/2020-05/documents/styrene\\_update\\_2a.pdf](https://www.epa.gov/sites/default/files/2020-05/documents/styrene_update_2a.pdf), last downloaded May 2, 2022. NOAEL of 34,000 µg/m<sup>3</sup> ≈ 7.8 ppmv, regulatory values of 85-2,980 mg/m<sup>3</sup> ≈ 7.8 ppmv

<sup>22</sup> BAAQMD, “CEQA Thresholds and Guidelines Update,” <https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines>, answer to “Frequently Asked Questions” #4, “Will there be a threshold for construction-related emissions”, last accessed May 11, 2022.

Table 3. Project GHG Emissions and Context

	Project (total MT CO <sub>2</sub> e)
Non-CIPP emissions sources	32
CIPP sources (off-road equipment and boiler)	52
Total (potential)**	84
BAAQMD Significance Thresholds for <i>annual operational emissions</i>	10,000 MT CO <sub>2</sub> e <i>per year</i> (stationary sources)  1,100 MT CO <sub>2</sub> e <i>per year</i> (other sources)

\*Values shown are PM-10; PM-2.5 is always a subset of PM-10.

\*\*Based on a conservative assumption that open cut work, manhole work, and

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**Sanitary Sewer Repairs  
Santa Clara County, Summer**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.75	1000sqft	0.02	750.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	4			<b>Operational Year</b>	2024
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - date selected to be conservative (i.e., earlier in time than actual construction expected, and hot season)  
(utility company is irrelevant for this project)

Land Use - This land type is recommended for "construction only" by CalEEMod guidance

Construction Phase - construction phases per proj description; conservatively assume all phases (except paving) could overlap

Off-road Equipment - equipment from equipment list

Grading - no grading

Construction Off-road Equipment Mitigation -

Off-road Equipment - Equipment as identified by M&M

Off-road Equipment - equip as identified by MM

Off-road Equipment - per MM

Off-road Equipment - per MM

Demolition -

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Trips and VMT - vendor trips are for water trucks and concrete truck (per CalEEMod user's guide Section 4.3.2)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	9.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	10.00	1.00
tblGrading	MaterialExported	0.00	222.00
tblOffRoadEquipment	HorsePower	78.00	158.00
tblOffRoadEquipment	HorsePower	84.00	613.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	1.00	6.00

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

**2.0 Emissions Summary**

**2.1 Overall Construction (Maximum Daily Emission)**

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.8461	32.8554	39.3528	0.0942	0.7872	1.3890	2.1762	0.1637	1.3413	1.5050	0.0000	9,788.8788	9,788.8788	1.1041	0.0607	9,834.5814
<b>Maximum</b>	<b>3.8461</b>	<b>32.8554</b>	<b>39.3528</b>	<b>0.0942</b>	<b>0.7872</b>	<b>1.3890</b>	<b>2.1762</b>	<b>0.1637</b>	<b>1.3413</b>	<b>1.5050</b>	<b>0.0000</b>	<b>9,788.8788</b>	<b>9,788.8788</b>	<b>1.1041</b>	<b>0.0607</b>	<b>9,834.5814</b>

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.8461	32.8554	39.3528	0.0942	0.5650	1.3890	1.9540	0.1300	1.3413	1.4713	0.0000	9,788.8788	9,788.8788	1.1041	0.0607	9,834.5814
<b>Maximum</b>	<b>3.8461</b>	<b>32.8554</b>	<b>39.3528</b>	<b>0.0942</b>	<b>0.5650</b>	<b>1.3890</b>	<b>1.9540</b>	<b>0.1300</b>	<b>1.3413</b>	<b>1.4713</b>	<b>0.0000</b>	<b>9,788.8788</b>	<b>9,788.8788</b>	<b>1.1041</b>	<b>0.0607</b>	<b>9,834.5814</b>



Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.6000e-004	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.7000e-004</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.6000e-004	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.7000e-004</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail**

**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Open cut excavation/pipelay/backfill	Site Preparation	6/6/2022	6/16/2022	5	9	
2	Open cut paving	Paving	6/17/2022	6/17/2022	5	1	
3	Manhole Removal and Replacement	Demolition	6/6/2022	6/7/2022	5	2	
4	Manhole Cone Replacement	Demolition	6/6/2022	6/6/2022	5	1	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.02**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Open cut paving	Cement and Mortar Mixers	0	6.00	9	0.56
Manhole Removal and Replacement	Concrete/Industrial Saws	1	8.00	81	0.73
Manhole Cone Replacement	Concrete/Industrial Saws	1	8.00	81	0.73
Manhole Cone Replacement	Graders	0	6.00	187	0.41
Open cut excavation/pipelay/backfill	Graders	0	8.00	187	0.41
Manhole Cone Replacement	Rubber Tired Dozers	0	6.00	247	0.40
Open cut paving	Pavers	0	7.00	130	0.42

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Open cut paving	Rollers	0	7.00	80	0.38
Manhole Removal and Replacement	Rubber Tired Dozers	0	1.00	247	0.40
Manhole Cone Replacement	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Manhole Removal and Replacement	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Open cut paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Open cut excavation/pipe/lay/backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Open cut excavation/pipe/lay/backfill	Excavators	2	8.00	158	0.38
Open cut excavation/pipe/lay/backfill	Air Compressors	1	8.00	158	0.48
Open cut excavation/pipe/lay/backfill	Generator Sets	1	8.00	613	0.74
Open cut excavation/pipe/lay/backfill	Skid Steer Loaders	1	8.00	65	0.37
Open cut excavation/pipe/lay/backfill	Plate Compactors	1	8.00	8	0.43
Open cut paving	Concrete/Industrial Saws	1	8.00	81	0.73
Open cut paving	Plate Compactors	1	8.00	8	0.43
Manhole Removal and Replacement	Skid Steer Loaders	1	8.00	65	0.37
Manhole Cone Replacement	Skid Steer Loaders	1	8.00	65	0.37

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Manhole Cone Replacement	3	8.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Open cut excavation/pipe/lay/backfill	7	18.00	1.00	28.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Open cut paving	2	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Manhole Removal and Replacement	4	10.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.2 Open cut excavation/pipelay/backfill - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7900e-003	0.0000	2.7900e-003	4.2000e-004	0.0000	4.2000e-004			0.0000			0.0000
Off-Road	2.4541	20.3265	22.5386	0.0640		0.7854	0.7854		0.7616	0.7616		6,842.9594	6,842.9594	0.6480		6,859.1605
<b>Total</b>	<b>2.4541</b>	<b>20.3265</b>	<b>22.5386</b>	<b>0.0640</b>	<b>2.7900e-003</b>	<b>0.7854</b>	<b>0.7881</b>	<b>4.2000e-004</b>	<b>0.7616</b>	<b>0.7621</b>		<b>6,842.9594</b>	<b>6,842.9594</b>	<b>0.6480</b>		<b>6,859.1605</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0149	0.5196	0.1124	1.9800e-003	0.0544	4.8500e-003	0.0593	0.0149	4.6400e-003	0.0196		215.8172	215.8172	7.4300e-003	0.0342	226.1950
Vendor	2.2300e-003	0.0544	0.0162	2.1000e-004	6.7700e-003	5.9000e-004	7.3600e-003	1.9500e-003	5.6000e-004	2.5100e-003		22.8595	22.8595	5.2000e-004	3.3700e-003	23.8769
Worker	0.0510	0.0316	0.4720	1.3100e-003	0.1479	7.5000e-004	0.1486	0.0392	6.9000e-004	0.0399		132.8018	132.8018	3.6000e-003	3.3400e-003	133.8866
<b>Total</b>	<b>0.0681</b>	<b>0.6057</b>	<b>0.6006</b>	<b>3.5000e-003</b>	<b>0.2091</b>	<b>6.1900e-003</b>	<b>0.2152</b>	<b>0.0561</b>	<b>5.8900e-003</b>	<b>0.0620</b>		<b>371.4785</b>	<b>371.4785</b>	<b>0.0116</b>	<b>0.0409</b>	<b>383.9586</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.2 Open cut excavation/pipelay/backfill - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2600e-003	0.0000	1.2600e-003	1.9000e-004	0.0000	1.9000e-004			0.0000			0.0000
Off-Road	2.4541	20.3265	22.5386	0.0640		0.7854	0.7854		0.7616	0.7616	0.0000	6,842.9594	6,842.9594	0.6480		6,859.1605
<b>Total</b>	<b>2.4541</b>	<b>20.3265</b>	<b>22.5386</b>	<b>0.0640</b>	<b>1.2600e-003</b>	<b>0.7854</b>	<b>0.7866</b>	<b>1.9000e-004</b>	<b>0.7616</b>	<b>0.7618</b>	<b>0.0000</b>	<b>6,842.9594</b>	<b>6,842.9594</b>	<b>0.6480</b>		<b>6,859.1605</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0149	0.5196	0.1124	1.9800e-003	0.0544	4.8500e-003	0.0593	0.0149	4.6400e-003	0.0196		215.8172	215.8172	7.4300e-003	0.0342	226.1950
Vendor	2.2300e-003	0.0544	0.0162	2.1000e-004	6.7700e-003	5.9000e-004	7.3600e-003	1.9500e-003	5.6000e-004	2.5100e-003		22.8595	22.8595	5.2000e-004	3.3700e-003	23.8769
Worker	0.0510	0.0316	0.4720	1.3100e-003	0.1479	7.5000e-004	0.1486	0.0392	6.9000e-004	0.0399		132.8018	132.8018	3.6000e-003	3.3400e-003	133.8866
<b>Total</b>	<b>0.0681</b>	<b>0.6057</b>	<b>0.6006</b>	<b>3.5000e-003</b>	<b>0.2091</b>	<b>6.1900e-003</b>	<b>0.2152</b>	<b>0.0561</b>	<b>5.8900e-003</b>	<b>0.0620</b>		<b>371.4785</b>	<b>371.4785</b>	<b>0.0116</b>	<b>0.0409</b>	<b>383.9586</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.3 Open cut paving - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3978	3.0525	3.8751	6.7400e-003		0.1599	0.1599		0.1599	0.1599		627.1440	627.1440	0.0359		628.0418
Paving	0.0524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.4502</b>	<b>3.0525</b>	<b>3.8751</b>	<b>6.7400e-003</b>		<b>0.1599</b>	<b>0.1599</b>		<b>0.1599</b>	<b>0.1599</b>		<b>627.1440</b>	<b>627.1440</b>	<b>0.0359</b>		<b>628.0418</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4600e-003	0.1089	0.0325	4.3000e-004	0.0136	1.1800e-003	0.0147	3.9000e-003	1.1300e-003	5.0300e-003		45.7190	45.7190	1.0300e-003	6.7400e-003	47.7538
Worker	0.0142	8.7800e-003	0.1311	3.6000e-004	0.0411	2.1000e-004	0.0413	0.0109	1.9000e-004	0.0111		36.8894	36.8894	1.0000e-003	9.3000e-004	37.1907
<b>Total</b>	<b>0.0186</b>	<b>0.1177</b>	<b>0.1636</b>	<b>7.9000e-004</b>	<b>0.0546</b>	<b>1.3900e-003</b>	<b>0.0560</b>	<b>0.0148</b>	<b>1.3200e-003</b>	<b>0.0161</b>		<b>82.6084</b>	<b>82.6084</b>	<b>2.0300e-003</b>	<b>7.6700e-003</b>	<b>84.9445</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.3 Open cut paving - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3978	3.0525	3.8751	6.7400e-003		0.1599	0.1599		0.1599	0.1599	0.0000	627.1440	627.1440	0.0359		628.0418
Paving	0.0524					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.4502</b>	<b>3.0525</b>	<b>3.8751</b>	<b>6.7400e-003</b>		<b>0.1599</b>	<b>0.1599</b>		<b>0.1599</b>	<b>0.1599</b>	<b>0.0000</b>	<b>627.1440</b>	<b>627.1440</b>	<b>0.0359</b>		<b>628.0418</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4600e-003	0.1089	0.0325	4.3000e-004	0.0136	1.1800e-003	0.0147	3.9000e-003	1.1300e-003	5.0300e-003		45.7190	45.7190	1.0300e-003	6.7400e-003	47.7538
Worker	0.0142	8.7800e-003	0.1311	3.6000e-004	0.0411	2.1000e-004	0.0413	0.0109	1.9000e-004	0.0111		36.8894	36.8894	1.0000e-003	9.3000e-004	37.1907
<b>Total</b>	<b>0.0186</b>	<b>0.1177</b>	<b>0.1636</b>	<b>7.9000e-004</b>	<b>0.0546</b>	<b>1.3900e-003</b>	<b>0.0560</b>	<b>0.0148</b>	<b>1.3200e-003</b>	<b>0.0161</b>		<b>82.6084</b>	<b>82.6084</b>	<b>2.0300e-003</b>	<b>7.6700e-003</b>	<b>84.9445</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.4 Manhole Removal and Replacement - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1337	0.0000	0.1337	0.0203	0.0000	0.0203			0.0000			0.0000
Off-Road	0.6741	6.2395	8.4032	0.0130		0.3197	0.3197		0.3062	0.3062		1,244.1019	1,244.1019	0.2430		1,250.1774
<b>Total</b>	<b>0.6741</b>	<b>6.2395</b>	<b>8.4032</b>	<b>0.0130</b>	<b>0.1337</b>	<b>0.3197</b>	<b>0.4535</b>	<b>0.0203</b>	<b>0.3062</b>	<b>0.3264</b>		<b>1,244.1019</b>	<b>1,244.1019</b>	<b>0.2430</b>		<b>1,250.1774</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3900e-003	0.0835	0.0181	3.2000e-004	8.7500e-003	7.8000e-004	9.5300e-003	2.4000e-003	7.5000e-004	3.1400e-003		34.6849	34.6849	1.1900e-003	5.5000e-003	36.3528
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0283	0.0176	0.2622	7.3000e-004	0.0822	4.1000e-004	0.0826	0.0218	3.8000e-004	0.0222		73.7788	73.7788	2.0000e-003	1.8500e-003	74.3815
<b>Total</b>	<b>0.0307</b>	<b>0.1011</b>	<b>0.2803</b>	<b>1.0500e-003</b>	<b>0.0909</b>	<b>1.1900e-003</b>	<b>0.0921</b>	<b>0.0242</b>	<b>1.1300e-003</b>	<b>0.0253</b>		<b>108.4637</b>	<b>108.4637</b>	<b>3.1900e-003</b>	<b>7.3500e-003</b>	<b>110.7342</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.4 Manhole Removal and Replacement - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0602	0.0000	0.0602	9.1100e-003	0.0000	9.1100e-003			0.0000			0.0000
Off-Road	0.6741	6.2395	8.4032	0.0130		0.3197	0.3197		0.3062	0.3062	0.0000	1,244.1019	1,244.1019	0.2430		1,250.1774
<b>Total</b>	<b>0.6741</b>	<b>6.2395</b>	<b>8.4032</b>	<b>0.0130</b>	<b>0.0602</b>	<b>0.3197</b>	<b>0.3799</b>	<b>9.1100e-003</b>	<b>0.3062</b>	<b>0.3153</b>	<b>0.0000</b>	<b>1,244.1019</b>	<b>1,244.1019</b>	<b>0.2430</b>		<b>1,250.1774</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3900e-003	0.0835	0.0181	3.2000e-004	8.7500e-003	7.8000e-004	9.5300e-003	2.4000e-003	7.5000e-004	3.1400e-003		34.6849	34.6849	1.1900e-003	5.5000e-003	36.3528
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0283	0.0176	0.2622	7.3000e-004	0.0822	4.1000e-004	0.0826	0.0218	3.8000e-004	0.0222		73.7788	73.7788	2.0000e-003	1.8500e-003	74.3815
<b>Total</b>	<b>0.0307</b>	<b>0.1011</b>	<b>0.2803</b>	<b>1.0500e-003</b>	<b>0.0909</b>	<b>1.1900e-003</b>	<b>0.0921</b>	<b>0.0242</b>	<b>1.1300e-003</b>	<b>0.0253</b>		<b>108.4637</b>	<b>108.4637</b>	<b>3.1900e-003</b>	<b>7.3500e-003</b>	<b>110.7342</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.5 Manhole Cone Replacement - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2675	0.0000	0.2675	0.0405	0.0000	0.0405			0.0000			0.0000
Off-Road	0.5918	5.4016	7.2842	0.0114		0.2747	0.2747		0.2647	0.2647		1,093.4825	1,093.4825	0.1943		1,098.3400
<b>Total</b>	<b>0.5918</b>	<b>5.4016</b>	<b>7.2842</b>	<b>0.0114</b>	<b>0.2675</b>	<b>0.2747</b>	<b>0.5422</b>	<b>0.0405</b>	<b>0.2647</b>	<b>0.3052</b>		<b>1,093.4825</b>	<b>1,093.4825</b>	<b>0.1943</b>		<b>1,098.3400</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.7700e-003	0.1670	0.0361	6.4000e-004	0.0175	1.5600e-003	0.0191	4.7900e-003	1.4900e-003	6.2900e-003		69.3698	69.3698	2.3900e-003	0.0110	72.7056
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0227	0.0140	0.2098	5.8000e-004	0.0657	3.3000e-004	0.0661	0.0174	3.1000e-004	0.0177		59.0230	59.0230	1.6000e-003	1.4800e-003	59.5052
<b>Total</b>	<b>0.0274</b>	<b>0.1811</b>	<b>0.2459</b>	<b>1.2200e-003</b>	<b>0.0832</b>	<b>1.8900e-003</b>	<b>0.0851</b>	<b>0.0222</b>	<b>1.8000e-003</b>	<b>0.0240</b>		<b>128.3929</b>	<b>128.3929</b>	<b>3.9900e-003</b>	<b>0.0125</b>	<b>132.2107</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.5 Manhole Cone Replacement - 2022**

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1204	0.0000	0.1204	0.0182	0.0000	0.0182			0.0000			0.0000
Off-Road	0.5918	5.4016	7.2842	0.0114		0.2747	0.2747		0.2647	0.2647	0.0000	1,093.4825	1,093.4825	0.1943		1,098.3400
<b>Total</b>	<b>0.5918</b>	<b>5.4016</b>	<b>7.2842</b>	<b>0.0114</b>	<b>0.1204</b>	<b>0.2747</b>	<b>0.3950</b>	<b>0.0182</b>	<b>0.2647</b>	<b>0.2829</b>	<b>0.0000</b>	<b>1,093.4825</b>	<b>1,093.4825</b>	<b>0.1943</b>		<b>1,098.3400</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.7700e-003	0.1670	0.0361	6.4000e-004	0.0175	1.5600e-003	0.0191	4.7900e-003	1.4900e-003	6.2900e-003		69.3698	69.3698	2.3900e-003	0.0110	72.7056
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0227	0.0140	0.2098	5.8000e-004	0.0657	3.3000e-004	0.0661	0.0174	3.1000e-004	0.0177		59.0230	59.0230	1.6000e-003	1.4800e-003	59.5052
<b>Total</b>	<b>0.0274</b>	<b>0.1811</b>	<b>0.2459</b>	<b>1.2200e-003</b>	<b>0.0832</b>	<b>1.8900e-003</b>	<b>0.0851</b>	<b>0.0222</b>	<b>1.8000e-003</b>	<b>0.0240</b>		<b>128.3929</b>	<b>128.3929</b>	<b>3.9900e-003</b>	<b>0.0125</b>	<b>132.2107</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**5.2 Energy by Land Use - NaturalGas**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.6000e-004	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
Unmitigated	3.6000e-004	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**6.2 Area by SubCategory**

**Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
<b>Total</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>		<b>1.7000e-004</b>

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-004	1.6000e-004	0.0000		1.7000e-004
<b>Total</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>		<b>1.7000e-004</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

Sanitary Sewer Repairs - Santa Clara County, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**

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**Off-road Equipment Emissions**

Emissions calculated in accordance with the methodology used in CalEEMod® [1]:

$$\text{Emission}_{\text{DieselEx}} = \sum_i (\text{EF}_i \times \text{Pop}_i \times \text{AvgHp}_i \times \text{Load}_i \times \text{Activity}_i)$$

where for a given equipment type/size of i,

EF = the emission factor

Pop = the number of pieces of equipment,

AvgHp = the size (or average size) of the equipment

Load = the load factor

Activity = hours of operation

Construction Phase Name: CIPP Workdays: 14

OFFROAD Equipment Type	CalEEMod® Default AvgHp	AvgHp	Pop	Hrs/Day	Tier (if known)	CalEEMod® Default Load	CalEEMod® EF (g/bhp-hr)							
							ROG	CO	NOx	SO2	PM10	PM2.5	CO2	CH4
Tractors/Loaders/Backhoes	97	97	1	8		0.37	0.26	3.53551	2.6472	0.005	0.142	0.131	475.8975	0.154
Pumps	84	12	2	8		0.74	0.707	3.519	4.4080	0.008	0.203	0.203	568.2990	0.063

[1] BREEZE Software, "Off-road Equipment", Section 4.2 of Appendix A: Calculation Details for CalEEMod", prepared for CAPCOA by BREEZE Software, May 2021, CalEEMod Version 2020.4.0.

Off-road Equipment Emissions

Construction Phase Name: CIPP Workdays: 14

OFFROAD Equipment Type	CalEEMod® Default AvgHp	AvgHp	Emissions (lb/day)								Emissions (tons/yr)							
			ROG	CO	NOx	SO2	PM10	PM2.5	CO2	CH4	ROG	CO	NOx	SO2	PM10	PM2.5	CO2	CH4
Tractors/Loaders/Backhoes	97	97	0.16	2.2	1.68	0.00	0.09	0.08	301	0.10	0.0012	0.0157	0.0117	0.0000	0.0006	0.0006	2	0.0007
Pumps	84	12	0.22	1.1	1.38	0.00	0.06	0.06	178	0.02	0.0016	0.0077	0.0097	0.0000	0.0004	0.0004	1	0.0001
			0.39	3.3	3.06	0.01	0.15	0.15	479	0.12	0.003	0.023	0.021	0.0000	0.001	0.001	3	0.001

## Emissions from CIPP Boiler and Resin

### 1. Emissions from Boiler

Emissions from 

10
----

 MMBtu/hr boiler ( 

300
-----

 boiler hp)  
 Operating 

6
---

 hr/day for 

11
----

 days

	ROG	NOx	CO	SO2	Exhaust PM	CO2	CH4	N2O	CO2e [2]
					GWP	1	25	298	
Emission factor, lb/1000 gal [1]	0.34	20	5	0.21	3.3	74	3.0E-03	6.0E-04	
Emission factor, lb/MMBtu [1]	2.4E-03	1.4E-01	3.6E-02	1.5E-03	2.4E-02	162.7	6.6E-03	1.3E-03	163.3
Emissions, lb/hr @ 100% load	0.024	1.4	0.36	0.02	0.24	1,627	0.07	0.01	1,633
lb/day	0.15	8.6	2.1	0.09	1.4				
tons/yr	8.0E-04	4.7E-02	1.2E-02	5.0E-04	7.8E-03				
	metric tonnes (MT)					48.7	2.0E-03	4.0E-04	48.9

[1] Non-GHG factors are from EPA, "Fuel Oil Combustion", Section 1.3 of "AP-42 Compilation of Air Emissions Factors", corrected May 2010. Available from <https://www3.epa.gov/ttn/chief/ap42/ch01/final/c01s03.pdf>. lb/1000 gal factors converted to lb/MMBtu by dividing by 140 MMBtu/1000 gal. SO2 based on ARB ULSD sulfur content of 15 ppmw (0.0015% w/w). GHG factors are from EPA regulations at 40 CFR 98, App. C. For NOx, this conservatively assumes that the boiler is exempt from BAAQMD's Regulation 9-7 limit on NOx (15 ppmvd @ 3% O2d = 0.018 lb/MMBtu, substantially lower than the 0.14 lb/MMBtu factor used)

[2] CO2e is calculated based on Global Warming Potentials (GWP) in 40 CFR 98 Table A-1 (1/25/298 for CO2/CH4/N2O)

### 2. Emissions from CIPP cure

Estimated lb of resin+hardener: 6,900 lb  
 % emitted: 8.87%  
 Emissions, lb: 612  
 Days of emission: 14  
 lb/day: 43.7

Sanitary Sewer Repairs - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**Sanitary Sewer Repairs  
Santa Clara County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.75	1000sqft	0.02	750.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	58
<b>Climate Zone</b>	4			<b>Operational Year</b>	2024
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - date selected to be conservative (i.e., earlier in time than actual construction expected, and hot season)  
(utility company is irrelevant for this project)

Land Use - This land type is recommended for "construction only" by CalEEMod guidance

Construction Phase - construction phases per proj description; conservatively assume all phases (except paving) could overlap

Off-road Equipment - equipment from equipment list

Grading - no grading

Construction Off-road Equipment Mitigation -

Off-road Equipment - Equipment as identified by M&M

Off-road Equipment - equip as identified by MM

Off-road Equipment - per MM

Off-road Equipment - per MM

Demolition -

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Trips and VMT - vendor trips are for water trucks and concrete truck (per CalEEMod user's guide Section 4.3.2)

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	1.00	9.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	10.00	2.00
tblConstructionPhase	NumDays	10.00	1.00
tblGrading	MaterialExported	0.00	222.00
tblOffRoadEquipment	HorsePower	78.00	158.00
tblOffRoadEquipment	HorsePower	84.00	613.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	1.00	6.00

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

**2.0 Emissions Summary**

**2.1 Overall Construction**

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0126	0.1050	0.1184	3.3000e-004	1.3400e-003	4.1000e-003	5.4500e-003	3.3000e-004	3.9800e-003	4.3000e-003	0.0000	31.5140	31.5140	3.0200e-003	1.8000e-004	31.6444
<b>Maximum</b>	<b>0.0126</b>	<b>0.1050</b>	<b>0.1184</b>	<b>3.3000e-004</b>	<b>1.3400e-003</b>	<b>4.1000e-003</b>	<b>5.4500e-003</b>	<b>3.3000e-004</b>	<b>3.9800e-003</b>	<b>4.3000e-003</b>	<b>0.0000</b>	<b>31.5140</b>	<b>31.5140</b>	<b>3.0200e-003</b>	<b>1.8000e-004</b>	<b>31.6444</b>

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0126	0.1050	0.1184	3.3000e-004	1.1900e-003	4.1000e-003	5.2900e-003	3.1000e-004	3.9800e-003	4.2800e-003	0.0000	31.5139	31.5139	3.0200e-003	1.8000e-004	31.6444
<b>Maximum</b>	<b>0.0126</b>	<b>0.1050</b>	<b>0.1184</b>	<b>3.3000e-004</b>	<b>1.1900e-003</b>	<b>4.1000e-003</b>	<b>5.2900e-003</b>	<b>3.1000e-004</b>	<b>3.9800e-003</b>	<b>4.2800e-003</b>	<b>0.0000</b>	<b>31.5139</b>	<b>31.5139</b>	<b>3.0200e-003</b>	<b>1.8000e-004</b>	<b>31.6444</b>

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	11.19	0.00	2.94	6.06	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2022	8-31-2022	0.1007	0.1007
		Highest	0.1007	0.1007

**2.2 Overall Operational**

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Open cut excavation/pipelay/backfill	Site Preparation	6/6/2022	6/16/2022	5	9	
2	Open cut paving	Paving	6/17/2022	6/17/2022	5	1	
3	Manhole Removal and Replacement	Demolition	6/6/2022	6/7/2022	5	2	

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4	Manhole Cone Replacement	Demolition	6/6/2022	6/6/2022	5	1
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**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.02**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Open cut paving	Cement and Mortar Mixers	0	6.00	9	0.56
Manhole Removal and Replacement	Concrete/Industrial Saws	1	8.00	81	0.73
Manhole Cone Replacement	Concrete/Industrial Saws	1	8.00	81	0.73
Manhole Cone Replacement	Graders	0	6.00	187	0.41
Open cut excavation/pipelay/backfill	Graders	0	8.00	187	0.41
Manhole Cone Replacement	Rubber Tired Dozers	0	6.00	247	0.40
Open cut paving	Pavers	0	7.00	130	0.42
Open cut paving	Rollers	0	7.00	80	0.38
Manhole Removal and Replacement	Rubber Tired Dozers	0	1.00	247	0.40
Manhole Cone Replacement	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Manhole Removal and Replacement	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Open cut paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Open cut excavation/pipelay/backfill	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Open cut excavation/pipelay/backfill	Excavators	2	8.00	158	0.38
Open cut excavation/pipelay/backfill	Air Compressors	1	8.00	158	0.48
Open cut excavation/pipelay/backfill	Generator Sets	1	8.00	613	0.74
Open cut excavation/pipelay/backfill	Skid Steer Loaders	1	8.00	65	0.37
Open cut excavation/pipelay/backfill	Plate Compactors	1	8.00	8	0.43
Open cut paving	Concrete/Industrial Saws	1	8.00	81	0.73

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Open cut paving	Plate Compactors	1	8.00	8	0.43
Manhole Removal and Replacement	Skid Steer Loaders	1	8.00	65	0.37
Manhole Cone Replacement	Skid Steer Loaders	1	8.00	65	0.37

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Manhole Cone Replacement	3	8.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Open cut excavation/pipelav/backfill	7	18.00	1.00	28.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Open cut paving	2	5.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Manhole Removal and Replacement	4	10.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Open cut excavation/pipelav/backfill - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0915	0.1014	2.9000e-004		3.5300e-003	3.5300e-003		3.4300e-003	3.4300e-003	0.0000	27.9352	27.9352	2.6500e-003	0.0000	28.0014
<b>Total</b>	<b>0.0110</b>	<b>0.0915</b>	<b>0.1014</b>	<b>2.9000e-004</b>	<b>1.0000e-005</b>	<b>3.5300e-003</b>	<b>3.5400e-003</b>	<b>0.0000</b>	<b>3.4300e-003</b>	<b>3.4300e-003</b>	<b>0.0000</b>	<b>27.9352</b>	<b>27.9352</b>	<b>2.6500e-003</b>	<b>0.0000</b>	<b>28.0014</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.2 Open cut excavation/pipelay/backfill - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.4200e-003	5.1000e-004	1.0000e-005	2.4000e-004	2.0000e-005	2.6000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.8812	0.8812	3.0000e-005	1.4000e-004	0.9235
Vendor	1.0000e-005	2.5000e-004	7.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0933	0.0933	0.0000	1.0000e-005	0.0975
Worker	2.2000e-004	1.6000e-004	1.9500e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5080	0.5080	2.0000e-005	1.0000e-005	0.5127
<b>Total</b>	<b>3.0000e-004</b>	<b>2.8300e-003</b>	<b>2.5300e-003</b>	<b>2.0000e-005</b>	<b>9.1000e-004</b>	<b>2.0000e-005</b>	<b>9.4000e-004</b>	<b>2.5000e-004</b>	<b>2.0000e-005</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>1.4825</b>	<b>1.4825</b>	<b>5.0000e-005</b>	<b>1.6000e-004</b>	<b>1.5338</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0915	0.1014	2.9000e-004		3.5300e-003	3.5300e-003		3.4300e-003	3.4300e-003	0.0000	27.9352	27.9352	2.6500e-003	0.0000	28.0013
<b>Total</b>	<b>0.0110</b>	<b>0.0915</b>	<b>0.1014</b>	<b>2.9000e-004</b>	<b>1.0000e-005</b>	<b>3.5300e-003</b>	<b>3.5400e-003</b>	<b>0.0000</b>	<b>3.4300e-003</b>	<b>3.4300e-003</b>	<b>0.0000</b>	<b>27.9352</b>	<b>27.9352</b>	<b>2.6500e-003</b>	<b>0.0000</b>	<b>28.0013</b>

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**3.2 Open cut excavation/pipelay/backfill - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.4200e-003	5.1000e-004	1.0000e-005	2.4000e-004	2.0000e-005	2.6000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.8812	0.8812	3.0000e-005	1.4000e-004	0.9235
Vendor	1.0000e-005	2.5000e-004	7.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0933	0.0933	0.0000	1.0000e-005	0.0975
Worker	2.2000e-004	1.6000e-004	1.9500e-003	1.0000e-005	6.4000e-004	0.0000	6.5000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5080	0.5080	2.0000e-005	1.0000e-005	0.5127
<b>Total</b>	<b>3.0000e-004</b>	<b>2.8300e-003</b>	<b>2.5300e-003</b>	<b>2.0000e-005</b>	<b>9.1000e-004</b>	<b>2.0000e-005</b>	<b>9.4000e-004</b>	<b>2.5000e-004</b>	<b>2.0000e-005</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>1.4825</b>	<b>1.4825</b>	<b>5.0000e-005</b>	<b>1.6000e-004</b>	<b>1.5338</b>

**3.3 Open cut paving - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0000e-004	1.5300e-003	1.9400e-003	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.2845	0.2845	2.0000e-005	0.0000	0.2849
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.3000e-004</b>	<b>1.5300e-003</b>	<b>1.9400e-003</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2845</b>	<b>0.2845</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.2849</b>

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**3.3 Open cut paving - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0207	0.0207	0.0000	0.0000	0.0217
Worker	1.0000e-005	0.0000	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0157	0.0157	0.0000	0.0000	0.0158
<b>Total</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0364</b>	<b>0.0364</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0375</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.0000e-004	1.5300e-003	1.9400e-003	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.2845	0.2845	2.0000e-005	0.0000	0.2849
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.3000e-004</b>	<b>1.5300e-003</b>	<b>1.9400e-003</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.2845</b>	<b>0.2845</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.2849</b>

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**3.3 Open cut paving - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0207	0.0207	0.0000	0.0000	0.0217
Worker	1.0000e-005	0.0000	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0157	0.0157	0.0000	0.0000	0.0158
<b>Total</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0364</b>	<b>0.0364</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0375</b>

**3.4 Manhole Removal and Replacement - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3000e-004	0.0000	1.3000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	6.2400e-003	8.4000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.1000e-004	3.1000e-004	0.0000	1.1286	1.1286	2.2000e-004	0.0000	1.1341
<b>Total</b>	<b>6.7000e-004</b>	<b>6.2400e-003</b>	<b>8.4000e-003</b>	<b>1.0000e-005</b>	<b>1.3000e-004</b>	<b>3.2000e-004</b>	<b>4.5000e-004</b>	<b>2.0000e-005</b>	<b>3.1000e-004</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>1.1286</b>	<b>1.1286</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.1341</b>

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**3.4 Manhole Removal and Replacement - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0315	0.0315	0.0000	0.0000	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0627	0.0627	0.0000	0.0000	0.0633
<b>Total</b>	<b>3.0000e-005</b>	<b>1.1000e-004</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0942</b>	<b>0.0942</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0963</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	6.2400e-003	8.4000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.1000e-004	3.1000e-004	0.0000	1.1286	1.1286	2.2000e-004	0.0000	1.1341
<b>Total</b>	<b>6.7000e-004</b>	<b>6.2400e-003</b>	<b>8.4000e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>3.2000e-004</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.1000e-004</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>1.1286</b>	<b>1.1286</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.1341</b>

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**3.4 Manhole Removal and Replacement - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0315	0.0315	0.0000	0.0000	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.4000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0627	0.0627	0.0000	0.0000	0.0633
<b>Total</b>	<b>3.0000e-005</b>	<b>1.1000e-004</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0942</b>	<b>0.0942</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0963</b>

**3.5 Manhole Cone Replacement - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3000e-004	0.0000	1.3000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	2.7000e-003	3.6400e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.3000e-004	1.3000e-004	0.0000	0.4960	0.4960	9.0000e-005	0.0000	0.4982
<b>Total</b>	<b>3.0000e-004</b>	<b>2.7000e-003</b>	<b>3.6400e-003</b>	<b>1.0000e-005</b>	<b>1.3000e-004</b>	<b>1.4000e-004</b>	<b>2.7000e-004</b>	<b>2.0000e-005</b>	<b>1.3000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.4960</b>	<b>0.4960</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.4982</b>

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**3.5 Manhole Cone Replacement - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0315	0.0315	0.0000	0.0000	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0253
<b>Total</b>	<b>1.0000e-005</b>	<b>1.0000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0566</b>	<b>0.0566</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0583</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	2.7000e-003	3.6400e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.3000e-004	1.3000e-004	0.0000	0.4960	0.4960	9.0000e-005	0.0000	0.4982
<b>Total</b>	<b>3.0000e-004</b>	<b>2.7000e-003</b>	<b>3.6400e-003</b>	<b>1.0000e-005</b>	<b>6.0000e-005</b>	<b>1.4000e-004</b>	<b>2.0000e-004</b>	<b>1.0000e-005</b>	<b>1.3000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.4960</b>	<b>0.4960</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.4982</b>

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**3.5 Manhole Cone Replacement - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0315	0.0315	0.0000	0.0000	0.0330
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0251	0.0251	0.0000	0.0000	0.0253
<b>Total</b>	<b>1.0000e-005</b>	<b>1.0000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0566</b>	<b>0.0566</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0583</b>

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4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.572464	0.055653	0.187060	0.115672	0.020329	0.005102	0.007934	0.006404	0.000900	0.000380	0.024412	0.000914	0.002776





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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	6.0000e-005	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

**6.2 Area by SubCategory**

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
<b>Total</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>

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**6.2 Area by SubCategory**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
<b>Total</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>1.0000e-005</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

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**7.2 Water by Land Use**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

Sanitary Sewer Repairs - Santa Clara County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**10.0 Stationary Equipment**

---

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**

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## **Appendix B**

# Biological Resources Technical Report



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# Biological Habitat Evaluation



## Annual Sanitary Sewer Repairs 2021, 2022, & 2023 Projects, 2021 Construction Package

### City of Santa Clara, Santa Clara County, California

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**May 2022**

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Appendix A. Special-status Species Tables

Appendix B. Representative Site Photographs

<b>KEY TO ABBREVIATIONS</b>	
<b>Abbreviation</b>	<b>Term</b>
AMM	Avoidance and Minimization Measure
BMP	Best Management Practice
CCC DPS	Central California Coast Distinct Population Segment
CCC ESU	Central California Coast Evolutionarily Significant Unit
CNPS	California Native Plant Society
CDFW	California Department of Fish and Wildlife
CRPR	California Rare Plant Rank
FE	Federal Endangered
FP	California Department of Fish and Wildlife Fully Protected
FT	Federal Threatened
NMFS: SC	National Marine Fisheries Service: Species of Concern
RWQCB	Regional Water Quality Control Board
SA	California Department of Fish and Wildlife Special Animals List
SC	State Candidate
SE	State Endangered
sDPS	southern Distinct Population Segment
SSC	California Department of Fish and Wildlife Species of Special Concern
ST	State Threatened
USFWS	United States Fish and Wildlife Service
USFWS: BCC	United States Fish and Wildlife Service: Birds of Conservation Concern
WBWG	Western Bat Working Group
WL	California Department of Fish and Wildlife Watch List

## 1.0 INTRODUCTION

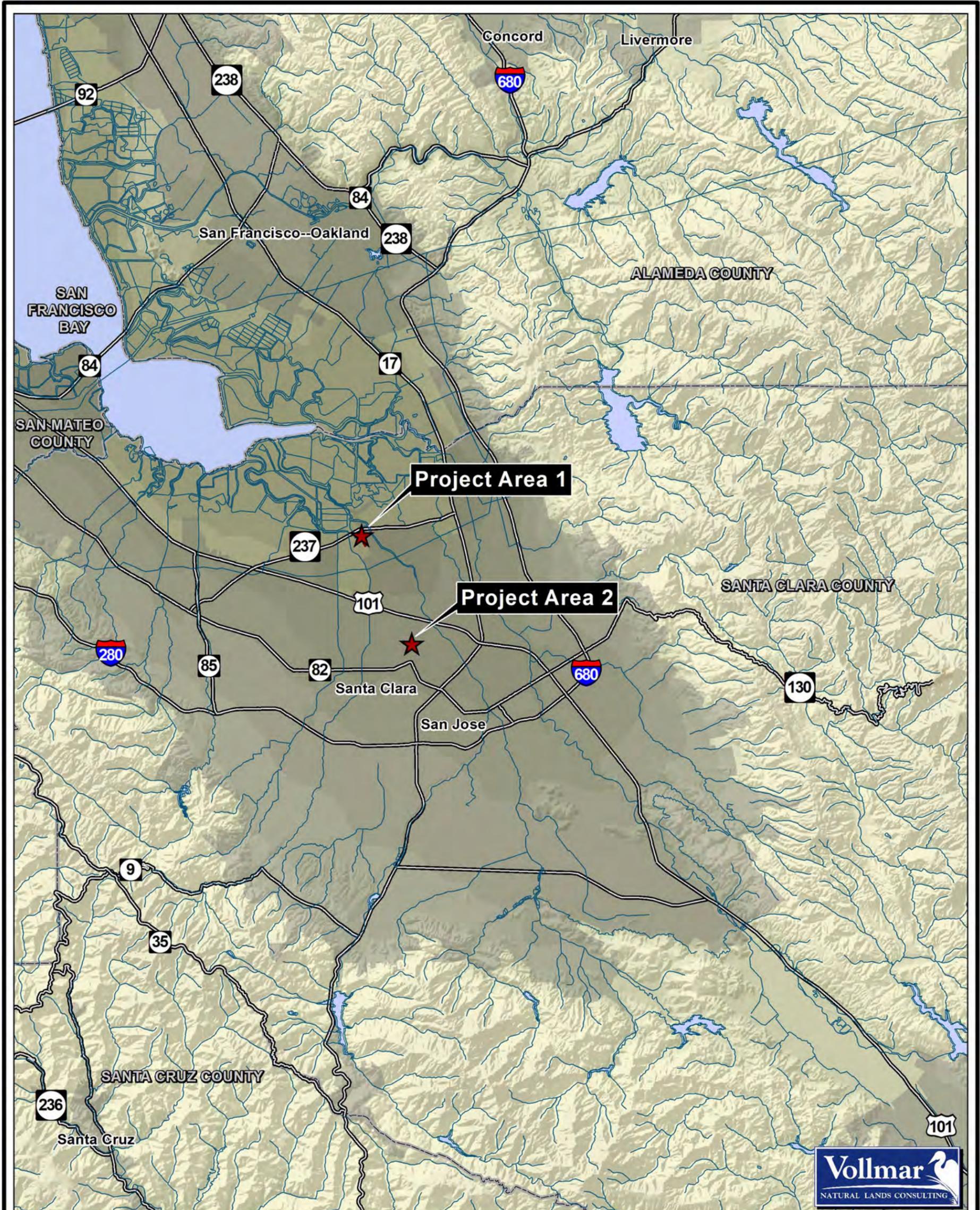
This report presents the methods and results of a biological habitat evaluation conducted by Vollmar Natural Lands Consulting, Inc. (VNLC) for maintenance activities related to the Annual Sanitary Sewer Repairs 2021, 2022, & 2023 Projects, 2021 Construction Package located within the City of Santa Clara (City), Santa Clara County, California (**Figure 1**).

The City is proposing to complete 48 repair projects by 2023. Many of the projects qualify for exemption from CEQA review, with the exception of five sewer segments. These five sewer segments are divided into two distinct areas of the overall Project Area, which are the focus of this report:

- **Project Area 1 – Northern Section.** The northern section includes segments 231, 232, 233, and 242 (**Figure 3a**).
- **Project Area 2 – Southern Section.** The southern section includes segment 100 (**Figure 3b**).

A total of five special-status animal species have potential to occur in the immediate vicinity of the Project Area. These include: pallid bat (*Antrozous pallidus*), Townsend’s big-eared bat (*Corynorhinus townsendii*), Cooper’s hawk (*Accipiter cooperii*), western burrowing owl (*Athene cunicularia hypugaea*), and American peregrine falcon (*Falco peregrinus anatum*). No plant species that are federally listed or designated by the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) have potential to occur within the Project Area (**Table 1**). Further information regarding habitat suitability and avoidance and minimization measures is discussed in **Section 4.0**.

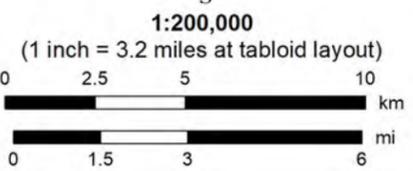
This habitat evaluation was conducted to identify and characterize existing conditions as well as assess the potential for special-status species, sensitive habitats, and jurisdictional features to occur within the Project Area. This evaluation also provides recommended avoidance and minimization measures intended to reduce potential impacts to special-status species, habitats and features to less-than-significant levels under California Environmental Quality Act (CEQA), and to avoid take of special-status species.



**Legend**

- County Boundary
- Urbanized Area
- Water Body
- River or Stream
- Highway

**FIGURE 1**  
**Regional Vicinity Map**  
 Annual Sanitary Sewer Repairs  
 2021, 2022, & 2023 Projects,  
 2021 Construction Package  
 Santa Clara County, California



Data Sources: Mott MacDonald, 2021 | GAP, 1998  
 DWR, 2001 | TIGER, 2012 | USGS, various  
 GIS/Cartography by: Misaki Yonashiro, Apr. 2022  
 Map File: 438\_7\_FIG\_1\_Vicinity\_B-P\_2022-0425.mxd

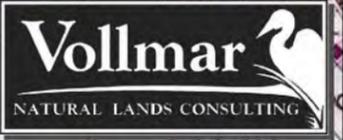
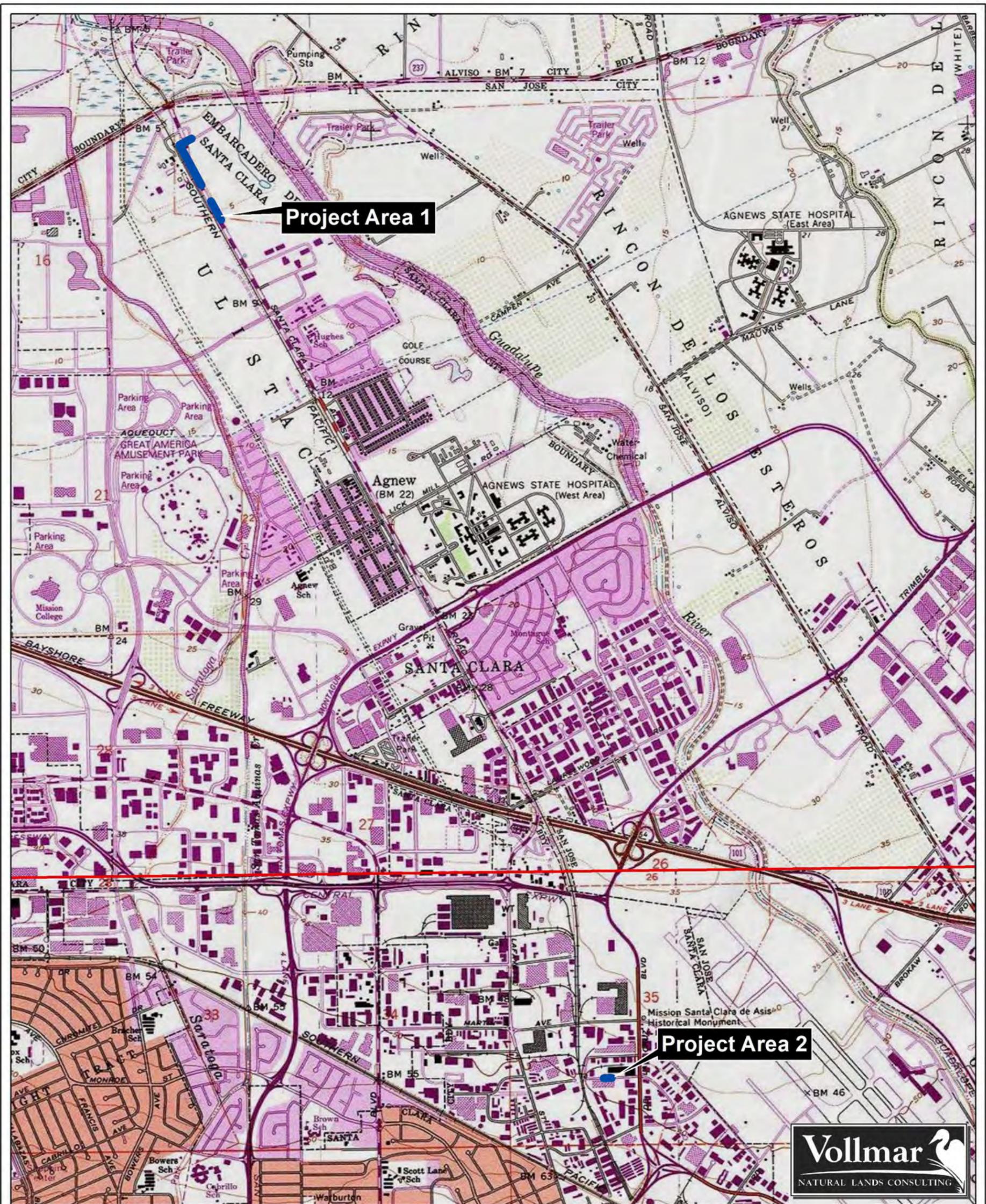


## 2.0 PROJECT LOCATION

The overall Project Area encompasses two main project areas: Project Area 1 and Project Area 2 (**Figure 2**). The Project Area is located west of Interstate Highway 880 and east of Lawrence Expressway, within the City of Santa Clara. It is mapped within the Milpitas (Project Area 1) and San Jose West (Project Area 2) 7.5' U.S. Geological Survey (USGS) topographic quadrangles.

Project Area 1 may be accessed from Interstate Highway 880 by transferring to State Highway 237 (Exit 8C), then exiting toward Lafayette Street (Exit 6), turning right onto Great America Parkway, another right onto Gold Street Connector, and finally turning right onto Lafayette Street. Segment 231 (the northernmost segment of Project Area 1) is located directly south of the intersection of Lafayette Street and Yerba Buena Way (**Figure 3a**).

Project Area 2 may be accessed from Highway 880 by exiting onto Montague Expressway (Exit 7), after 0.6 miles turning left onto E Trimble Road, and finally by turning right onto Matthew Avenue (**Figure 3b**). Project Area 2 is just west of San Jose International Airport.



**Legend**

- Existing Sewer Segment
- USGS 1:24k Quad Boundary

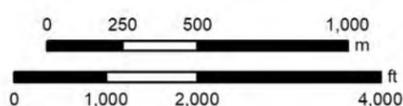
**FIGURE 2  
USGS Topographic Map**

**Annual Sanitary Sewer Repairs  
2021, 2022, & 2023 Projects,  
2021 Construction Package  
Santa Clara County, California**



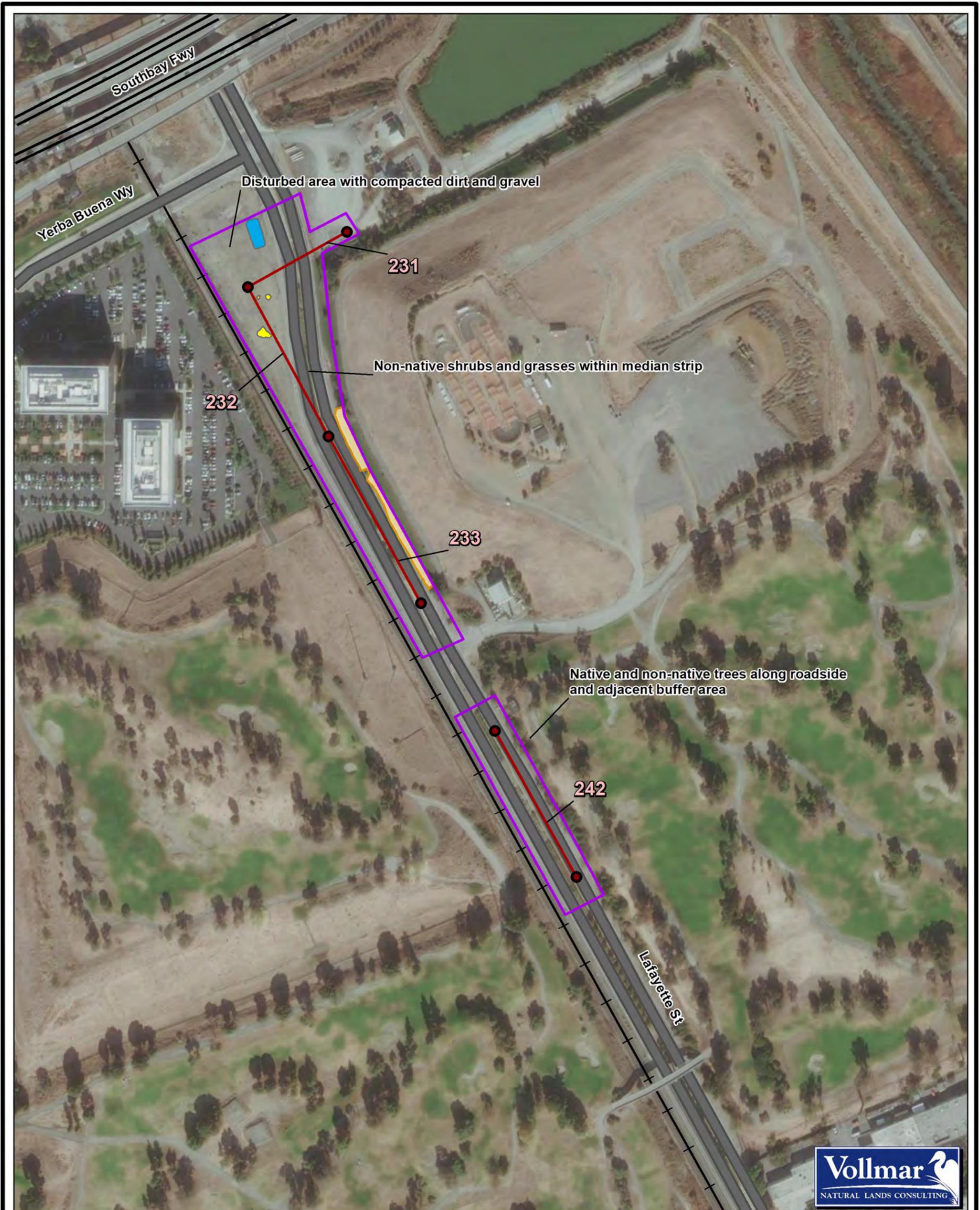
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(1 in. = approx. 0.38 mi at tabloid layout)



Sources: USGS DRG Series | Mott MacDonald, 2021  
Map Produced By: Misaki Yonashiro, Apr. 2022  
Map File: 438\_7\_FIG\_2\_DRG\_B-P\_2022-0425





**Legend**

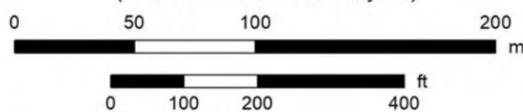
- Buffer Area
- Ground Squirrel Burrows
- Constructed Stormwater Basin
- Invasive Sea Fig Plant
- Street
- Freeway
- Train Track
- Existing Sewer Segment
- Sanitary Sewer Manhole

**FIGURE 3a**  
**Project Area 1 Site Map**  
**Annual Sanitary Sewer Repairs**  
**2021, 2022, & 2023 Projects,**  
**2021 Construction Package**  
**Santa Clara County, California**

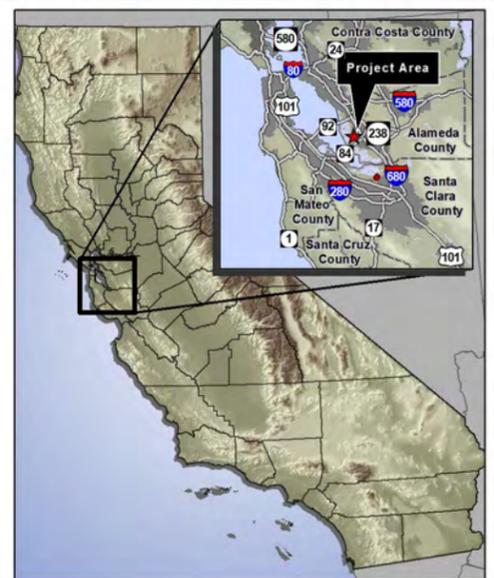


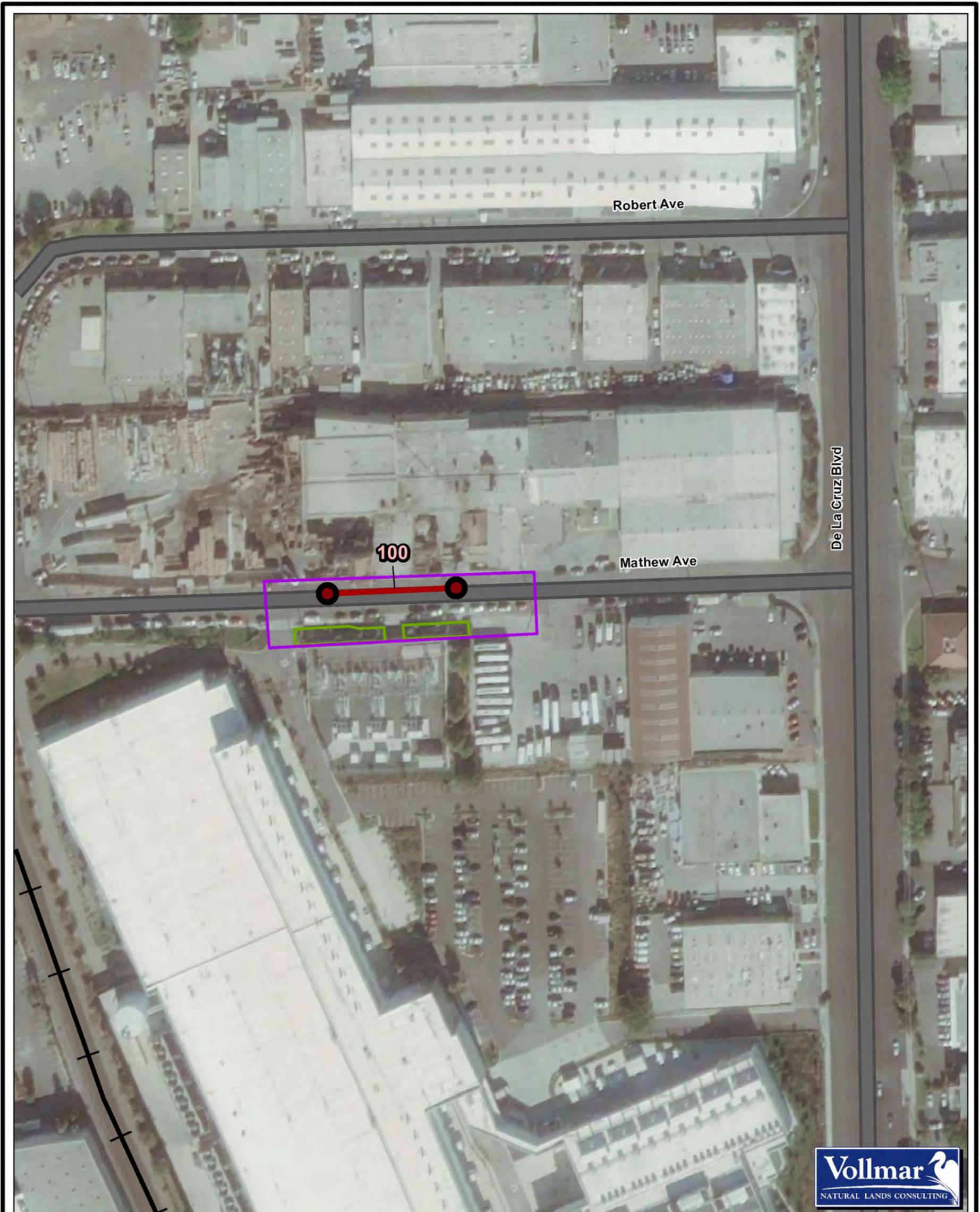
1:3,000

(1 in = 250 ft at tabloid layout)



Data Sources: Mott MacDonald, 2021 | VNLC, 2022  
 USFWS, 2019 | GAP, 1998 | DWR, 2016  
 ESRI/Digital Globe, 2019 (aerial imagery)  
 GIS/Cartography by: Misaki Yonashiro, Apr. 2022  
 Map File: 438\_7\_FIG\_3a\_Site\_1\_B-P\_2022-0425.mxd





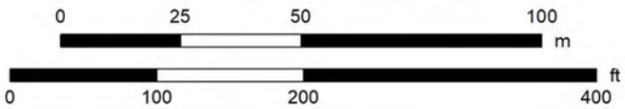
**Legend**

- Buffer Area
- Ornamental Plants
- Street
- + Train Track
- Existing Sewer Segment
- Sanitary Sewer Manhole

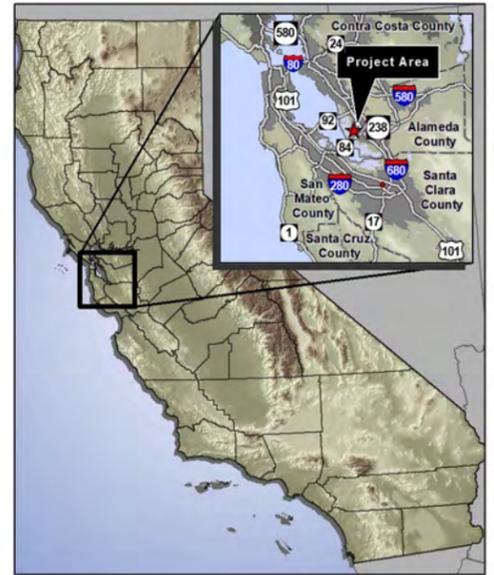
**FIGURE 3b**  
**Project Area 2 Site Map**  
**Annual Sanitary Sewer Repairs**  
**2021, 2022, & 2023 Projects,**  
**2021 Construction Package**  
**Santa Clara County, California**



1:1,500  
 (1 in = 125 ft at tabloid layout)



Data Sources: Mott MacDonald Group, 2021  
 VNLC, 2022 | USFWS, 2019 | GAP, 1998  
 ESRI/Digital Globe, 2019 (aerial imagery)  
 GIS/Cartography by: Misaki Yonashiro, Apr. 2022  
 Map File: 438\_7\_FIG\_3b\_Site\_2\_B-P\_2022-0425.mxd



## **3.0 METHODS**

### **3.1 Preliminary Review**

Prior to the Project Area visits, the latest version of the California Natural Diversity Database (CNDDDB 2022) was reviewed to identify special-status plants and wildlife observations in the vicinity. Additionally, the U.S. Fish and Wildlife Service (USFWS) Information Planning and Consultation System (IPaC) was reviewed to assess which federally listed species could occur in the vicinity of the Project Area. Additionally, a 9-quadrangle search was conducted through the CNPS Inventory of Rare and Endangered Plants (CNPS 2022). Site aerial imagery, project descriptions, and general regional conditions were also reviewed prior to the site visits. The CNDDDB plant and wildlife observations spatial data can be displayed as polygons or points on produced maps (CNDDDB 2018). For these projects, the CNDDDB spatial data is displayed as polygons. The point data represents the centroids of the polygons, and are typically used for small-scale maps (CNDDDB 2018). Furthermore, the polygons represent summary records for a species at a given location; size and shape of the polygons differ based on the uncertainty of the location information given with the summarized records (CNDDDB 2018).

### **3.2 Project Area Surveys**

A site visit of the Project Area was conducted by VNLC Staff Ecologist Misaki Yonashiro on March 3, 2022. All segments surveyed were on or adjacent to existing paved roads, and a buffer area was established around the segments anywhere from approximately 5-50 meters, dependent on any physical barriers such as fencing that were encountered, to focus the Biological Habitat Evaluation on areas which may be most impacted by the proposed projects. During the site visit, all observed flora and wildlife species, general conditions, and notable habitat features were recorded. A search was conducted for jurisdictional features (wetlands and other waters, etc.), sensitive habitats (native grasslands, etc.), and habitat potential for special-status species (nesting potential, burrows, etc.). Photographs detailing representative site conditions were also collected across the site (**Appendix B**).

## 4.0 RESULTS

### 4.1 Existing Site Conditions

The overall Project Area is situated within developed portions of the City, below the southern section of the San Francisco Bay. Project Area 1 is confined to Lafayette Street and the immediate vicinity. Land use surrounding Project Area 1 consists of commercial, light industrial/R&D, and recreational uses, along with the City's Eastside Retention Basin Facility (**Figure 3a**). Project Area 2 is confined to Matthew Avenue and the immediate vicinity. Land use surrounding Project Area 2 consists of commercial and industrial development and developed transportation infrastructure (San Jose International Airport less than a mile to the east) (**Figure 3b**).

Project Area 1 encompasses Lafayette Street, the adjacent roadsides, and a disturbed and compacted dirt and gravel area in the northwestern corner adjacent to the train tracks. The train tracks (just west of the Project Area 1 buffer area) are shared by Caltrans, ACE, and Amtrak. Lafayette Street is a divided roadway, with a median strip and four lanes total. The median strip includes non-native shrubs and grasses including oleander (*Nerium oleander*), soft chess (*Bromus hordeaceus*), and several other ornamental shrubs.

The roadside along the eastern side of segment 242 was mostly bare, compacted dirt and gravel. The few plant species that were observed during the site visit along this segment were longbeak stork's bill (*Erodium botrys*) and crimson bottlebrush (*Callistemon citrinus*), both non-natives.

The roadside along the eastern side of Segment 233 was overtaken by an invasive plant, sea fig (*Carpobrotus chilensis*), from almost the edge of the road to beyond the roadside fence eastward. The median strip adjacent segment 233 also included two blue jacaranda trees (*Jacaranda mimosifolia*) among the other shrubs and grasses throughout the rest of the median strip within Project Area 1.

Segment 232 continues in a northwesterly direction from Lafayette Street to the large dirt area just below the intersection of Lafayette Street and Yerba Buena Way. The dirt area was largely devoid of any features except for several weedy plant species and ground squirrel (*Otospermophilus* sp.) burrow openings. Three ground squirrel burrow complexes were found. There were approximately four large dirt mounds adjacent to one another, and the two older mounds had multiple large burrow openings. There was also one complex of three burrow openings in the ground just south of sanitary sewer manhole (SSMH) 114-14 (**Figure 3a**). No evidence could be found to determine whether the burrows were active or not, as no ground squirrels or burrowing owls were observed during the site visit, and there was no evidence of pellets, animal bones, or grass near the burrow openings. Both the east and west roadside of Lafayette Street had similar compositions of mostly bare, compacted dirt with occasional weedy species.

Segment 231 runs in a northeasterly direction from the large dirt area, across Lafayette Street, to

the City's Eastside Retention Basin Facility. Within the large dirt area, there is an approximately 2-acre Low Impact Design (LID) bioretention feature stormwater treatment at the end of two culverts that run under Lafayette Street, northwest of segment 231. Dominant plant species included an unknown bunchgrass (no flowering parts and therefore not identifiable to genus/species level), young grasses, prickly lettuce (*Lactuca serriola*), and willow herb (*Epilobium brachycarpum*). The area surrounding the easternmost manhole of segment 231 was not approachable due to the fence, but the mostly bare ground and weedy, ruderal vegetation was visible from the roadside.

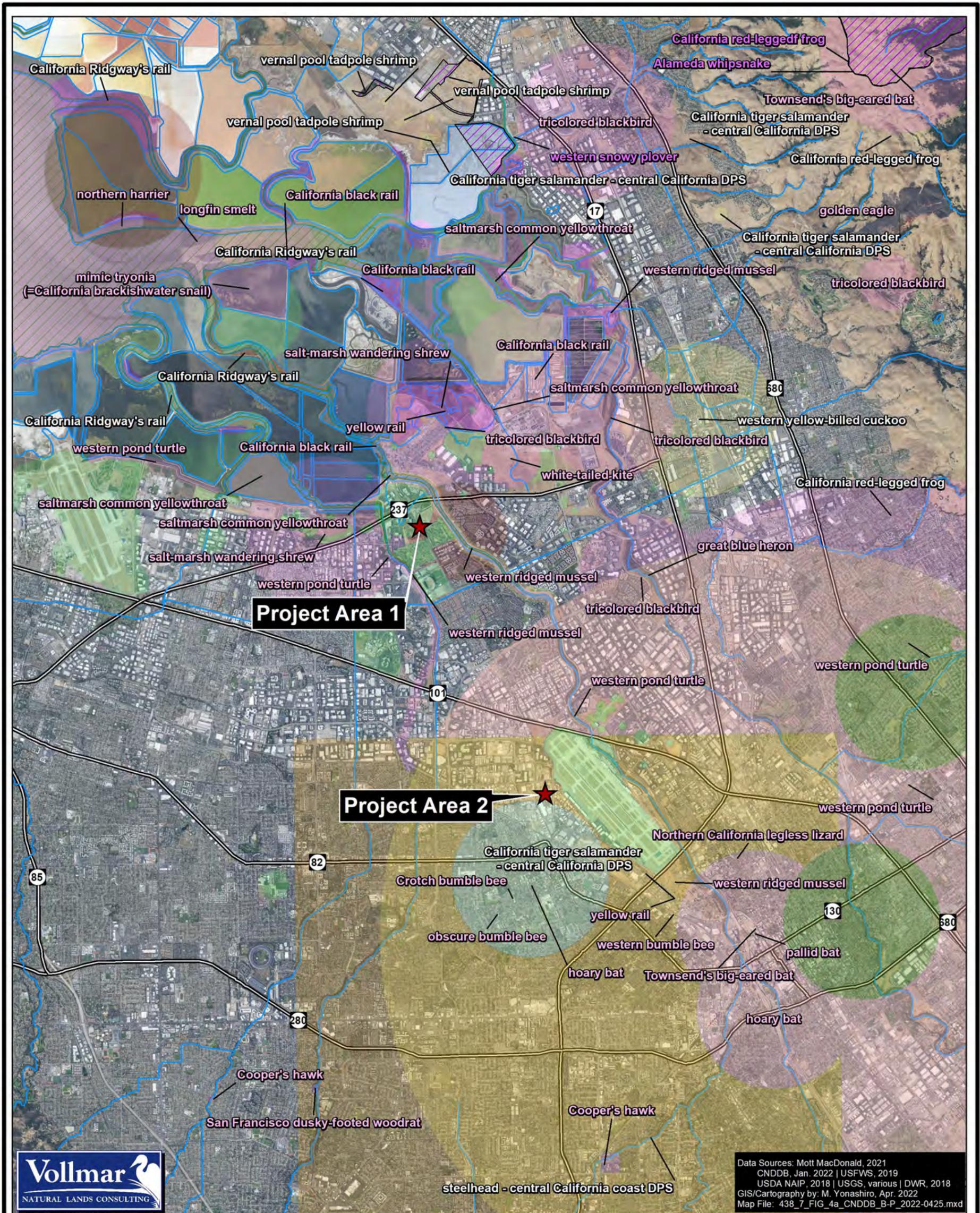
Project Area 2 consists of only one segment (segment 100) located in an industrial area. The sidewalk north of the segment was paved and devoid of any plant or natural habitat features. The sidewalk south of the segment was also paved but lined with ornamental trees, shrubs and herbs along each side of the sidewalk. The areas with ornamental plants appear to receive regular maintenance (trimmings and irrigation).

During the site visit to both Project Areas, bird species were observed including Anna's hummingbird (*Calypte anna*), northern mockingbird (*Mimus polyglottos*), California scrub jay (*Aphelocoma californica*), and European starling (*Sturnus vulgaris*). Multiple ground squirrel burrows were observed in the Project Area, although no ground squirrels were seen. Western burrowing owls have previously been observed near both Project Areas and there is potential for them to occur within Project Area 1, despite no observations during the site visit. For more information regarding wildlife and plant species habitat descriptions and suitability for each species to occur in the Project Area, see **Appendix A**.

#### **4.2 Special-Status Wildlife Species**

For the purposes of this report, special-status wildlife species include those taxa listed or proposed for listing as Threatened (FT, ST) or Endangered (FE, SE) under the Federal or State Endangered Species Acts, State or Federal candidates for listing (SC, FC), State Species of Special Concern (SSC) and federal Species of Concern (SOC), State Fully Protected Species (FP), Federal Birds of Conservation Concern (BCC), and other species included on the California Department of Fish and Wildlife (CDFW) Special Animals List.

**Figure 4a** shows the distribution of special-status wildlife species previously documented in the vicinity of the Project Area. **Figure 4b** shows the distribution of special-status plant species previously documented in the vicinity of the Project Area. Special-status wildlife and plant species known from the project region are identified in **Appendix A**, along with their regulatory status, habitat requirements, and an evaluation of their potential to occur on or near the Project Area. For special-status species with potential to occur within the Project Area, avoidance and minimization measures (AMMs) are recommended to avoid take and reduce impacts to less-than-significant levels under CEQA, further detailed below.



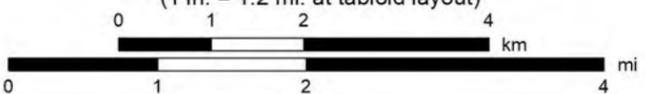
Data Sources: Mott MacDonald, 2021  
 CNDDDB, Jan. 2022 | USFWS, 2019  
 USDA NAIP, 2018 | USGS, various | DWR, 2018  
 GIS/Cartography by: M. Yonashiro, Apr. 2022  
 Map File: 438\_7\_FIG\_4a\_CNDDDB\_B-P\_2022-0425.mxd

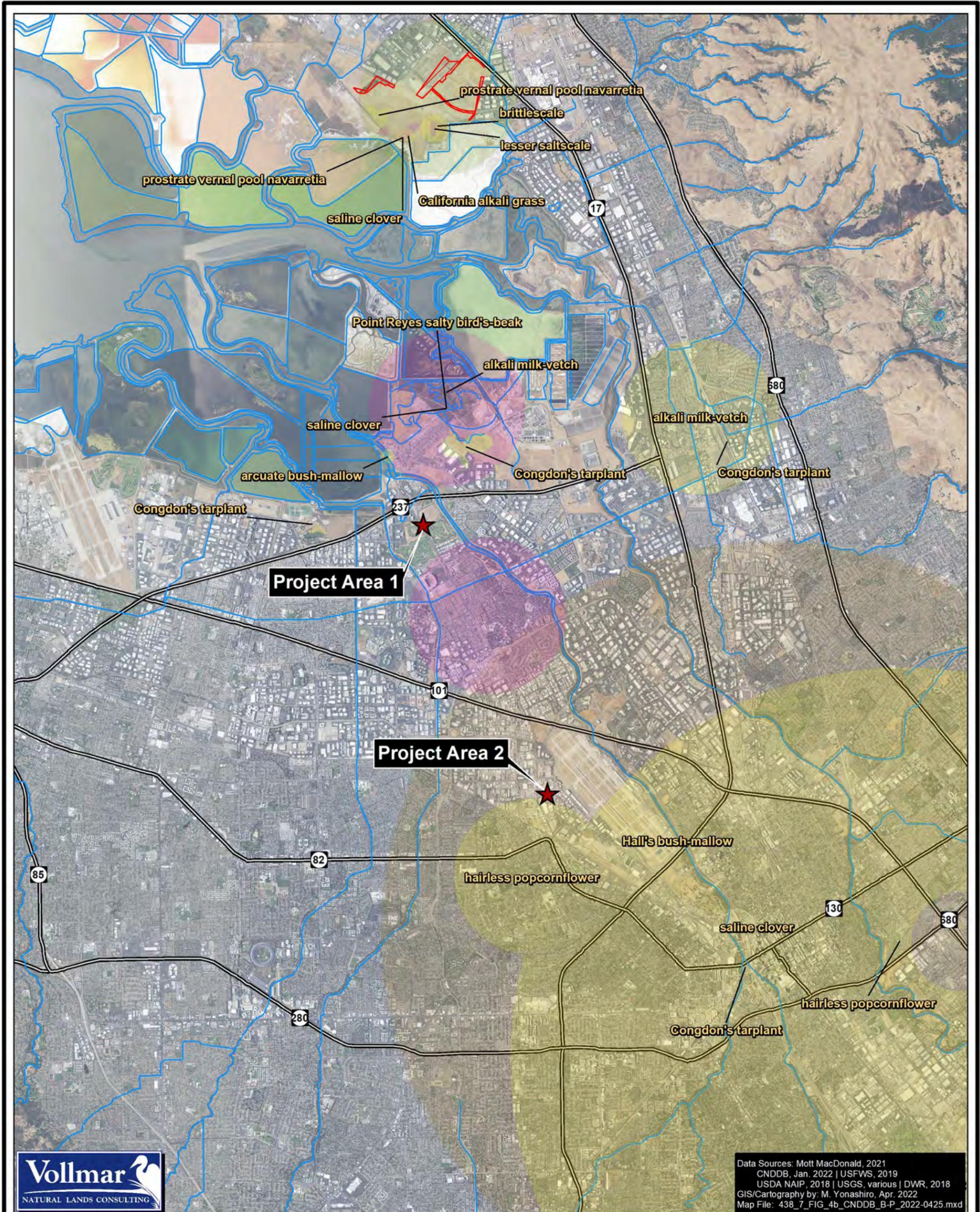
- Legend**
- Federally Listed Animal Occurrences**
    - other federally listed animal occurrences
    - salt-marsh harvest mouse
    - western snowy plover
  - Special-Status Animal Occurrences**
    - other special-status animal occurrences
    - Alameda song sparrow
    - Swainson's hawk
    - burrowing owl
    - American peregrine falcon
    - foothill yellow-legged frog
    - green sturgeon critical habitat
    - other critical habitat
  - state highway
  - river or stream

**FIGURE 4a**  
**Regional Special-status**  
**Animal Species Map**  
**Annual Sanitary Sewer Repairs**  
**2021, 2022, & 2023 Projects,**  
**2021 Construction Package**  
**Santa Clara County, California**



1:78,000  
 (1 in. = 1.2 mi. at tabloid layout)





Data Sources: Mott MacDonald, 2021  
 CNDDDB, Jan. 2022 | USFWS, 2019  
 USDA NAIP, 2018 | USGS, various | DWR, 2018  
 GIS/Cartography by: M. Yonashiro, Apr. 2022  
 Map File: 438\_7\_FIG\_4b\_CNDDDB\_B-P\_2022-0425.mxd

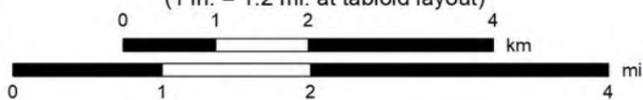
**Legend**

- Federally Listed Plant Occurrence**
  - Contra Costa goldfields
  - California seablite
  - robust spineflower
- Special-Status Plant Occurrences**
  - other special-status plant occurrences
  - Hoover's button-celery
- Critical Habitat**
  - Contra Costa goldfields
  - state highway
  - river or stream

**FIGURE 4b**  
**Regional Special-status Plant Species Map**  
 Annual Sanitary Sewer Repairs  
 2021, 2022, & 2023 Projects,  
 2021 Construction Package  
 Santa Clara County, California



1:78,000  
 (1 in. = 1.2 mi. at tabloid layout)



#### 4.2.1 Mammal Species with the Potential to Occur

- Pallid bat (*Antrozous pallidus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)

##### 4.2.1.1 Pallid Bat

The pallid bat is a CDFW Species of Special Concern and is designated as “high” priority by the Western Bat Working Group (WBWG). The species is found in low elevation areas all over California, except for the Shasta region and the northwestern portion of the state. Pallid bats prefer a variety of foraging habitats, including deserts, grasslands, shrublands, woodlands, and forests, and are most commonly found in dry, open habitats with rocky areas, trees, buildings, or bridges for roosting. The pallid bat is extremely sensitive to human disturbance of roosting sites. During the day time the bats can also occupy caves, mines, hollowed trees and empty buildings. The bat uses echolocation to hunt prey, mainly insects and arachnids, on the ground (Harris 1988a). The closest documented occurrence is approximately 2 miles from Project Area 2 (**Figure 4a**).

##### *Potential Project Impacts*

Pallid bats have the potential to occur within the Project Area due to the presence of foraging habitat and mature trees within Project Area 1 (**Figure 3a**) which may provide roosting habitat. The buildings surrounding both Project Area 1 and 2 may also provide roosting habitat (**Figure 3b**), although they may not be suitable due to the species' sensitivity to human disturbance. No impact to their habitat is expected as the projects do not plan to remove any trees or demolish buildings. Expected noise and light are not projected to exceed current ambient conditions typical in the urban setting. No avoidance and minimization measures are recommended.

##### 4.2.1.2 Townsend's Big-eared Bat

The Townsend's big-eared bat is a CDFW Species of Special Concern and is designated as “high” priority by the WBWG. Townsend's big-eared bats prefer to roost in caves, tunnels, mines, and buildings. They prefer mesic habitats, as well as pine forests and arid desert scrub habitat. The closest documented occurrence of Townsend's big-eared bat relative to Project Area 2 is approximately 2 miles, and over 5 miles away from Project Area 1 (**Figure 4a**).

##### *Potential Project Impacts*

Townsend's big-eared bat has the potential to roost in the mature trees adjacent Project Area 1, and buildings within and adjacent Project Areas 1 and 2 (**Figures 3a** and **3b**). No impact to their habitat is expected as the projects do not plan to remove any trees or demolish buildings. No avoidance and minimization measures are recommended.

#### 4.2.2 Bird Species with the Potential to Occur

- Cooper's hawk (*Accipiter cooperii*)
- Western burrowing owl (*Athene cunicularia hypugaea*)

- American peregrine falcon (*Falco peregrinus anatum*)
- Migratory and Nesting Birds (The Migratory Bird Treaty Act [16 U.S.C. 704] and the California Fish and Game Code [Section 3503])

**AMMs for Nesting Birds:** All activities within 300 feet of the sewer lines and manholes will be scheduled between September 1 and January 31, outside the February 1 – August 31 bird nesting period, if possible. If this cannot be implemented, the City will implement the following measures:

If activities that may disturb nesting bird species, such as heavy machinery use or vegetation trimming/removal, are required during the nesting period, the City will retain a qualified biologist to conduct a pre-construction nesting bird survey covering the Project footprint and a 300-foot-wide surrounding buffer. The survey will be conducted within 2 weeks of the start of construction-related activity. If active nests are documented within the 300-foot-wide buffer, the following measure will be implemented:

If active nest(s) of any species are identified within the 300-foot-wide buffer survey area, a no-activity buffer will be established around the nest for the duration of the nesting season, or until a biologist determines the young have fledged and left the nest, or that the nest has been abandoned. No entry into the no-activity buffer will be permitted. The no-activity buffer will be delineated in the field by or under the supervision of the biologist, using temporary construction fencing or another suitable low-impact medium. The width of the buffer will be determined by the biologist, based on the species involved, the amount of vegetative and other screening between the nest and areas where construction activity will take place, and, if appropriate, other site-specific factors. If special-status species are involved, the biologist will consult with the appropriate resource agency(ies) (DFW and/or USFWS) in determining the width of the buffer.

#### ***4.2.2.1 Cooper's Hawk***

Cooper's hawk is on the CDFW Watch List. In the past 50 years, Cooper's hawks' breeding numbers have decreased due to the degradation and destruction of their nesting habitat, in addition to bioaccumulation of pesticides (Grindrod and Walton, BLM; Polite 1988). Cooper's hawks tend to nest in deciduous trees, around 20-50 feet above the ground. Cooper's hawks' nest in dense stands of pines, oaks, Douglas-firs, and other large trees, often next to streams, rivers, creeks, or other riparian habitat. They are also commonly found in wooded suburban areas (including parks, quiet neighborhoods, fields, and busy streets with sufficient tree cover). Cooper's hawks often prefer more patchy stands of trees for perching (Polite 1988). The closest documented occurrence of Cooper's hawk relative to Project Area 2 is approximately 4.5 miles (**Figure 4a**).

#### ***Potential Project Impacts***

The large trees, particularly adjacent to Project Area 1, offer potential nesting habitat for this

species. It is unlikely that the species will occur in Project Area 2 as there is no sufficient tree cover and the area is frequently trafficked.

*Recommended Avoidance and Mitigation Measures*

See the **AMMs for Nesting Birds**.

**4.2.2.2 Western Burrowing Owl**

The western burrowing owl is a CDFW Species of Special Concern and USFWS Bird of Conservation Concern. The western burrowing owl occurs throughout non-mountainous western North America; within California, burrowing owls can be found from Mexico to the northern Central Valley in the lowlands and desert regions. While the range of burrowing owls within California has not significantly decreased, breeding birds have disappeared from many parts of their range, and abundance appears to have declined significantly in the latter half of the 1900s (SCVHA 2012). Burrowing owls prefer open habitat with short vegetation and minimal trees. This species utilizes grasslands, shrublands, and agricultural areas which have existing burrow complexes or soils that allow them to create burrows and hunt insects and small mammals. The closest documented occurrence of the species relative to Project Area 1 is less than 300 meters away, and 0.6 mile away from Project Area 2 (**Figure 4a**).

*Potential Project Impacts*

The western burrowing owl has potential to occur within Project Area 1 due to the presence of multiple ground squirrel burrows. It is not expected to be present in Project Area 2, which does not offer open ground with small mammal burrows.

*Recommended Avoidance and Mitigation Measures*

**AMMs for Western Burrowing Owl:** If any upland disturbance activities occur during the western burrowing owl nesting season (February 1 – August 31), the City will retain a qualified biologist to conduct preconstruction surveys covering all areas of suitable habitat within 250 feet of the proposed activity. The survey will last a minimum of 3 hours, and will either begin 1 hour before sunrise and continue until 2 hours after sunrise or begin 2 hours before sunset and continue until 1 hour after sunset. If no owls are detected during a first survey, a second survey will be conducted. If owls are detected during the first survey, a second survey is not needed. All owls observed will be counted and their locations will be mapped, and the following protocol-level measure will be implemented:

If evidence of nesting western burrowing owls is found, a 250-foot-wide no-disturbance buffer zone will be established around each occupied nest and will be delineated in the field by the biologist, using a suitable low-impact medium. Construction may proceed outside the no-disturbance buffer zones.

#### ***4.2.2.3 American Peregrine Falcon***

The peregrine falcon was delisted from its status as federally and state endangered in 2008, but remains classified as CDFW Fully Protected and a USFWS Bird of Conservation Concern. There are three subspecies that occur within North America, but *Falco peregrinus anatum* is the only subspecies that breeds in California (Mitchell 2000). American peregrine falcons are known to occur throughout California. Some of the American peregrine falcon populations occurring in California are migrants, while others are year-round residents (Comrack and Logsdon 2008). Their breeding range occurs along the length of the coast and, less frequently, on the east side of the Sierras (ibid). American peregrine falcons prefer to breed near water with vertical nesting sites such as cliffs, steep banks, and ledges. They tend to establish territories near abundant food sources, which primarily consist of birds, though small mammals may also be consumed. Riparian habitat and wetlands are important habitats year-round, especially in the non-breeding season (Polite and Pratt 1988a). The main threats to the species include pesticide consumption which reduces reproductive success by thinning eggshells and poisoning birds, and habitat degradation from urban development (Comrack and Logsdon 2008). Project Area 2 is within a CNDDDB documented polygon of the species (**Figure 4**).

#### *Potential Project Impacts*

Project Area 2 and the adjacent area provide marginal foraging habitat. The Project Areas do not provide suitable nesting habitat as all the buildings within and adjacent to the Areas are low-rise buildings versus the preferable high-rise buildings. No avoidance and minimization measures are recommended.

#### ***4.2.2.4 Migratory and Nesting Birds***

The Migratory Bird Treaty Act (16 U.S.C. 704) and the California Fish and Game Code (Section 3503) prohibits take of migratory birds or disturbance to the active nests of most native birds. In addition to the special-status bird species listed above, numerous protected migratory birds and birds of conservation concern could use the project vicinity (including trees or shrubs in the vicinity of Project Areas 1 and 2) for migration (i.e., roosting) or nesting, as well as other common bird species protected under the Migratory Bird Treaty Act (see **Appendix A Table 1**).

#### *Recommended Avoidance and Minimization Measures*

See the **AMMs for Nesting Birds**.

### **4.3 Special-Status Plant Species and Communities**

No plant species with special ranking (CRPR) by the CNPS have potential to occur in the vicinity of the Project Area. Of the 52 plant species known from the region (**Appendix A Table 2**), the Project Area does not support any suitable habitat, as the Project Area is roadway and ruderal, planted areas.

#### **4.4 Wetlands or Waters of the U.S.**

Project Area 1 (the large disturbed dirt area) includes an LID bioretention feature for stormwater treatment at the end of two culverts that run under Lafayette Street (**Figure 3a**). As such, it is not a jurisdictional wetland or Water of the U.S. under current rules. It is dominated by bunchgrass, young grasses, willow herb and non-native weedy plant species such as prickly lettuce. No action is anticipated to occur within this feature, as it is not within the projects' footprints. Project Area 2 does not hold any wetland features.

## 5.0 CONCLUSION

### 5.1 Key Assumptions

The following impact analysis is based on the projects' descriptions included in this report.

### 5.2 Impacts Found To Be Less Than Significant With Avoidance and Minimization Measures

A total of five special-status species have potential to occur in the immediate vicinity of the Project Area. These include pallid bat, Townsend's big-eared bat, Cooper's hawk, western burrowing owl, and American peregrine falcon. No species that are federal listed or with rare designations under California Native Plant Society (CRPR) listings have potential to occur within the vicinity of Project Area. The Project Area supports one bioretention basin, which disqualifies it from jurisdictional status, and therefore there are no potentially jurisdictional wetlands or Waters of the U.S. in proximity to any of the sewer segments and manholes.

The proposed projects are expected to have less than significant impact on the local and regional populations of pallid bat and Townsend's bat. The projects are expected to have less than significant impact with the implementation of Avoidance and Minimization Measures as detailed in this Biological Habitat Evaluation on Cooper's hawk, western burrowing owl, and American peregrine falcon, resulting in no take of any listed species.

## 6.0 REFERENCES

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**APPENDIX A**  
**SPECIAL-STATUS SPECIES TABLES**

**Table 1. Special-status Animal Species with Potential to Occur in the Project Area**

<i>Scientific Name</i> Common Name	Status	Habitat Description	Potential to Occur in Project Area
<b>Mammals</b>			
Pallid bat <i>Antrozous pallidus</i>	<b>SSC, BLM:S, USFS:S</b>	Forages in a variety of habitats. Roosts in rocky outcrops, buildings, and hollow trees.	<b>Potential to occur.</b> Area immediately surrounding the Project Area supports potential foraging habitat and mature trees and buildings that may provide roosting habitat.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	<b>SSC, BLM:S, USFS:S</b>	Prefers mesic habitats, maternity roosts in caves, tunnels, mines and buildings.	<b>Potential to occur.</b> Area immediately surrounding the Project Area supports potential foraging habitat and buildings that may provide roosting habitat.
Hoary bat <i>Lasiurus cinereus</i>	<b>WBWG:M</b>	Forested habitat.	<b>Not expected.</b> Project Area does not support forest habitat.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	<b>SSC</b>	Occupies a region that extends along the coastal mountain range from central California to Oregon. It prefers areas with chaparral and oak woodlands.	<b>Not expected.</b> Project Area does not provide suitable habitat.
Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	<b>FE, SE, FP</b>	Salt marshes which provide dense cover.	<b>Not expected.</b> Project Area does not provide foraging habitat.
Salt-marsh wandering shrew <i>Sorex vagrans halicoetes</i>	<b>SSC</b>	Salt marshes which provide dense cover.	<b>Not expected.</b> Project Area does not provide foraging habitat.
<b>Birds</b>			
Cooper's Hawk <i>Accipiter cooperii</i>	<b>WL</b>	Nests in coast live oaks and other forest habitat, may use large trees in suburban and urban settings.	<b>Potential to occur.</b> Large trees adjacent Project Area 1 may provide nesting habitat.
Clark's Grebe <i>Aechmophorus clarkii</i>	<b>BCC</b>	Mostly nests on large freshwater lakes and marshes with emergent vegetation along the edges. Forages in only aquatic habitat for mostly fish.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although marginal roosting habitat is present at City's Eastside Retention Basin east of Lafayette Street.
Tricolored Blackbird <i>Agelaius tricolor</i>	<b>SC, SSC, BLM:S</b>	Large freshwater marshes. Forages in open habitats such as pastures and lawns.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.

Golden Eagle <i>Aquila chrysaetos</i>	<b>FP, BLM:S, WL, USFWS: BCC</b>	Forages in open terrain such as grassland, desert, savannah, or young forests and shrub habitat. Constructs large nests on platforms of steep cliffs or in large trees in open areas.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Great Blue Heron <i>Ardea herodias</i>	<b>SA</b>	In shallow estuaries and fresh and saline emergent wetlands. Common July to October in salt ponds where fish are numerous. Locally common near rookeries February to June or July, many scattered throughout northern California.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Black Turnstone <i>Arenaria melanocephala</i>	<b>BCC</b>	Mostly prefer rocky habitats with strong surf along Pacific coastlines for foraging and roosting. Use arctic coastal lowlands or sedge meadows for nesting.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although species may be present around San Francisco Bay.
Burrowing Owl <i>Athene cunicularia</i>	<b>SSC</b>	Open, treeless areas with low, sparse vegetation in grasslands, deserts, pastures, agricultural fields, and more. Associated with Animal burrows, where they also nest.	<b>Potential to occur.</b> Nearest occurrence is about 1.5 miles away. Animal burrows present within buffer of Project Area.
Oak Titmouse <i>Baeolophus inornatus</i>	<b>BCC</b>	Prefers open woodlands of oak and pine. Sometimes forages and breeds in riparian areas, and ventures into residential areas. Roosts in cavity in tree or snag.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although marginal habitat is present along Guadalupe River east of Lafayette Street Segments.
Swainson's Hawk <i>Buteo swainsoni</i>	<b>BLM:S, USFWS:BCC</b>	Forages in open grasslands and prairies. Nests adjacent to riparian habitats.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Lawrence's Goldfinch <i>Carduelis lawrencei</i>	<b>BCC</b>	Mainly nest in dry, open oak woodlands with a freshwater source, but can also nest and forage in pinyon pine-juniper woodlands, coastal scrub, and streamsidess. They have been known to use various habitats erratically.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Wrentit <i>Chamaea fasciata</i>	<b>BCC</b>	Nests and forages year-round in chaparral and coastal scrub along the West Coast. Away from the coast they nest and forage in dense shrublands, and in northwest California they	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.

		breed in oak woodlands and mixed forests.	
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i>	<b>FT, SSC, USFWS: BCC</b>	Coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Black Tern <i>Chlidonias niger</i>	<b>BCC</b>	Nests in large freshwater wetlands, or sometimes in rice fields or river islands. Outside of the nesting season, they forage in tropical ocean waters, or coastlines, lagoons, salt pans, marshes, flooded fields, and estuaries not far from the coastline.	<b>Not expected.</b> Immediate vicinity of Project Area does not provide suitable nesting or foraging habitat, although the salt ponds just south of San Francisco Bay provide foraging habitat.
Northern Harrier <i>Circus hudsonius</i>	<b>SSC</b>	Most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Western Yellow-Billed Cuckoo <i>Coccyzus americanus occidentalis</i>	<b>FT, SE, USFWS: BCC</b>	Nests in riparian habitat.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Olive-sided Flycatcher <i>Contopus cooperi</i>	<b>BCC</b>	Nests mainly in western coniferous and boreal forests	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Yellow Rail <i>Coturnicops noveboracensis</i>	<b>SSC, USFS:S, USFWS: BCC</b>	Densely vegetated coastal tidal marshes, seasonally flooded wetlands, and wet meadows.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
White-tailed Kite <i>Elanus leucurus</i>	<b>FP, BLM:S</b>	Undisturbed open grasslands, meadows, farmlands, and emergent wetlands for foraging. Nests near top of dense oak, willow, or other tree stands.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
American Peregrine Falcon <i>Falco peregrinus anatum</i>	<b>FP, USFWS:BCC</b>	Breed near water with vertical nesting sites such as cliffs, steep banks, and ledges. Nest and winter in habitats including wetlands, woodlands, other forested habitats, cities, agricultural areas, and coastal habitats. Riparian areas and coastal and inland wetlands are important habitats yearlong, especially in nonbreeding seasons.	<b>Potential to occur.</b> Foraging habitat present in adjacent areas to Project Area.

Saltmarsh Common Yellowthroat <i>Geothlypis trichas sinuosa</i>	<b>SSC, USFWS: BCC</b>	Tied to the distribution of suitable freshwater and salt marshes with nearby willow thickets. Nests in marshy areas that are usually higher off the ground.	<b>Not expected.</b> Project Area does not provide marsh habitat with willow thickets.
Black Oystercatcher <i>Haematopus bachmani</i>	<b>BCC</b>	Nests and forages in rocky marine habitats. Also forages in open mudflats, and occasionally open grassy sites adjacent to the ocean.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.
Bald Eagle <i>Haliaeetus leucocephalus</i>	<b>SE, FP, BCC</b>	Nests in forested areas adjacent to large bodies of water. Perch in tall, mature coniferous or deciduous trees.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although species may be present along Guadalupe River east of Lafayette Street Segments.
California Black Rail <i>Laterallus jamaicensis coturniculus</i>	<b>ST, FP, BLM:S, USFWS: BCC</b>	Freshwater marshes and wetland meadows that are in close proximity to larger bay waters.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although species may be present along Guadalupe River east of Lafayette Street Segments
Short-billed Dowitcher <i>Limnodromus griseus</i>	<b>BCC</b>	Nests in wetlands, small lakes, wet meadows, and sometimes in river floodplains. During the non-breeding season, they mostly forage in saltwater and brackish water estuaries and lagoons with tidal activity and shallows	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although the salt ponds just south of San Francisco Bay provide foraging habitat.
Marbled Godwit <i>Limosa fedoa</i>	<b>BCC</b>	They are observed along the West Coast during the non-breeding season, and forage in estuaries, coastal mudflats, and sandy beaches	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although the salt ponds just south of San Francisco Bay provide foraging habitat.
Alameda Song Sparrow <i>Melospiza melodia pusillula</i>	<b>SSC, USFWS: BCC</b>	Tidal salt marsh.	<b>Not expected.</b> Project Area does not provide suitable habitat, although species may be present along Guadalupe River east of Lafayette Street Segments.
Nuttall's Woodpecker <i>Picoides nuttallii</i>	<b>BCC</b>	Largely reside in oak woodlands in California, but are known to also use wooded suburban areas and woodlands nearby streams	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat, although species may be present along Guadalupe River east of Lafayette Street Segments.
California Ridgway's Rail <i>Rallus obsoletus obsoletus</i>	<b>FE, SE, FP</b>	Salt marshes and tidal sloughs.	<b>Not expected.</b> Project Area does not provide suitable foraging or nesting habitat.

Black Skimmer <i>Rynchops niger</i>	BCC	Reside around sandy beaches and islands, but can also reside in large lakes. Also forage in estuaries, lagoons, rivers, creeks, saltmarsh pools, ditches, and tidal waters of bays	<b>Not expected.</b> Project Area does not provide suitable foraging habitat, although species may be present along Guadalupe River east of Lafayette Street Segments and salt ponds just south of San Francisco Bay.
California Thrasher <i>Toxostoma redivivum</i>	BCC	Reside in chaparral habitat, and open woodlands of the chaparral transition zones of the norther part of its range	<b>Not expected.</b> Project Area does not provide suitable foraging habitat.
Willet <i>Tringa semipalmata</i>	BCC	Inhabits marshes, open beaches, mudflats, bayshores, and rocky coastal zones.	<b>Not expected.</b> Project Area does not provide suitable foraging habitat, although species may be present around San Francisco Bay.
<b>Amphibians</b>			
Foothill yellow-legged frog <i>Rana boylei</i>	SE, SSE,	Rocky streams in a variety of habitats.	<b>Not expected.</b> Project Area does not provide any suitable habitat.
California red-legged frog <i>Rana draytonii</i>	FT, SSC	Quiet pools of freshwater streams, and occasionally ponds.	<b>Not expected.</b> Project Area does not provide any suitable habitat.
<b>Fishes</b>			
Steelhead - central California coast DPS <i>Oncorhynchus mykiss irideus</i> pop. 8	FT	Streams, rivers, lakes, estuaries, ocean.	<b>Not expected.</b> Project Area does not provide any suitable habitat.
Longfin smelt <i>Spirinchus thaleichthys</i>	FC, ST	Nearshore waters, estuaries, and lower portions of freshwater streams. Typically found in the middle or deeper parts of the water column. Does not occur within non-tidal riverine habitats.	<b>Not expected.</b> Project Area does not provide any suitable habitat.
<b>Crustaceans</b>			
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE	Habitats where vernal pool tadpole shrimps have been observed range in size from small, clear, well-vegetated vernal pools to highly turbid, alkali scald pools to large winter lakes.	<b>Not expected.</b> Project Area does not provide any suitable habitat.
<b>Mollusks</b>			

Western ridged mussel <i>Gonidea angulata</i>	SA	Freshwater creeks and rivers of all sizes. Substrates varying from firm mud to coarse particles. Rarely found in lakes or reservoirs.	<b>Not expected.</b> Project Area does not provide any suitable habitat.
Mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	SA	Coastal lagoons, estuaries, and salt marshes where it lives in permanently flooded areas.	<b>Not expected.</b> Project Area does not provide any suitable habitat.
<b>Reptiles</b>			
Northern California legless lizard <i>Anniella pulchra</i>	SSC	Moist soil in sparsely vegetated areas.	<b>Not expected.</b> Project Area does not provide suitable habitat.
Western pond turtle <i>Emys marmorata</i>	SSC	Permanent and intermittent waters of rivers, creeks, small lakes and ponds, marshes, unlined irrigation canals, and reservoirs.	<b>Not expected.</b> Project Area does not provide any suitable habitat.

Notes:

FT –Federal Threatened; FE – Federal Endangered; ST – State Threatened; SE - State Endangered; SC- State Candidate; SSC – CDFW Species Special Concern; SA- CDFW Special Animal List; FP – CDFW Fully Protected; WL – CDFW Watch List; BLM: S -Bureau of Land Management: Sensitive; USFS: S - United States Forestry Service; USFWS: BCC - United States Fish and Wildlife Service: Birds of Conservation Concern ; NMFS: SC - National Marine Fisheries Service: Species of Concern; WBWG:M – Western Bat Working Group: Medium

**Table 2. Special-status Plant Species with Potential to Occur in the Project Area**

<i>Scientific Name</i> Common Name (Family)	Status (FESA/CESA/ CRPR) <sup>1</sup>	Habitat Description	Potential to Occur on Project Area
<b>Plants</b>			
<i>Eryngium aristulatum</i> var. <i>hooveri</i> Hoover's button-celery (Apiaceae)	--/--/1B.1	Vernal pools; 10-150 feet; (June) July (August)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Balsamorhiza macrolepis</i> big-scale balsamroot (Asteraceae)	--/--/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Serpentine (sometimes); 150-5,100 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Cirsium fontinale</i> var. <i>campylon</i> Mt. Hamilton thistle (Asteraceae)	--/--/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Seeps, Serpentine; 330-2,920 feet; (February) April-October	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Lessingia tenuis</i> spring lessingia (Asteraceae)	--/--/4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Openings; 985-7,055 feet; May-July	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Eriophyllum jepsonii</i> Jepson's woolly sunflower (Asteraceae)	--/--/4.3	Chaparral, Cismontane woodland, Coastal scrub, Serpentine (sometimes); 655-3,365 feet; April-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Lasthenia conjugens</i> Contra Costa goldfields (Asteraceae)	FE/--/1B.1	Cismontane woodland, Playas, Valley and foothill grassland, Vernal pools, Mesic; 0-1,540 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Isocoma menziesii</i> var. <i>diabolica</i> Satan's goldenbush (Asteraceae)	--/--/4.2	Cismontane woodland; 50-1,310 feet; August-October	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Lessingia hololeuca</i> woolly-headed lessingia (Asteraceae)	--/--/3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland Clay, Serpentine; 50-1,000 feet; June-October	<b>Not expected.</b> Project Area does not support suitable habitat.

<i>Lessingia micradenia</i> var. <i>glabrata</i> smooth lessingia (Asteraceae)	--/--/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Roadsides (often), Serpentinite; 395-1,380 feet; (April-June) July-November	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant (Asteraceae)	--/--/1B.1	Valley and foothill grassland; 0-755 feet; May-October (November)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Senecio aphanactis</i> chaparral ragwort (Asteraceae)	--/--/2B.2	Chaparral, Cismontane woodland, Coastal scrub; 50-2,625 feet; January-April (May)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Monolopia gracilens</i> woodland woollythreads (Asteraceae)	--/--/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Serpentinite; 330-3,935 feet; (February) March-July	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Plagiobothrys glaber</i> hairless popcornflower (Boraginaceae)	--/--/1A	Marshes and swamps, Meadows and seeps; 50-590 feet; March-May	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Streptanthus albidus</i> ssp. <i>albidus</i> Metcalf Canyon jewelflower (Brassicaceae)	FE/--/1B.1	Valley and foothill grassland; 150-2,625 feet; April-July	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewelflower (Brassicaceae)	--/--/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; 310-3,280 feet; (March) April-September (October)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Campanula exigua</i> chaparral harebell (Campanulaceae)	--/--/1B.2	Chaparral; 900-4,100 feet; May-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Spergularia macrotheca</i> var. <i>longistyla</i> long-styled sand-spurrey (Caryophyllaceae)	--/--/1B.2	Marshes and swamps, Meadows and seeps; 0-835 feet; February-May	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Extriplex joaquinana</i> San Joaquin spearscale (Chenopodiaceae)	--/--/1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Alkaline; 5-2,740 feet; April-October	<b>Not expected.</b> Project Area does not support suitable habitat.

<i>Atriplex depressa</i> brittlescale (Chenopodiaceae)	--/--/1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools, Alkaline, Clay; 5-1,050 feet; April-October	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Atriplex minuscula</i> lesser saltscale (Chenopodiaceae)	--/--/1B.1	Chenopod scrub, Playas, Valley and foothill grassland, Alkaline, Sandy; 50-655 feet; May-October	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Suaeda californica</i> California seablite (Chenopodiaceae)	FE/--/1B.1	Marshes and swamps; 0-50 feet; July-October	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Convolvulus simulans</i> small-flowered morning-glory (Convolvulaceae)	--/--/4.2	Chaparral, Coastal scrub, Valley and foothill grassland, Clay, Seeps, Serpentine; 100-2,430 feet; March-July	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Dudleya abramsii</i> ssp. <i>setchellii</i> Santa Clara Valley dudleya (Crassulaceae)	FE/--/1B.1	Cismontane woodland, Valley and foothill grassland, Rocky, Serpentine; 195-1,755 feet; April-October	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Eleocharis parvula</i> small spikerush (Cyperaceae)	--/--/4.3	Marshes and swamps; 5-9,910 feet; (April)June-August (September)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch (Fabaceae)	--/--/1B.2	Playas, Valley and foothill grassland, Vernal pools, Alkaline; 5-195 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Trifolium hydrophilum</i> saline clover (Fabaceae)	--/--/1B.2	Marshes and swamps, Valley and foothill grassland, Vernal pools; 0-985 feet; April-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Hoita strobilina</i> Loma Prieta hoita (Fabaceae)	--/--/1B.1	Chaparral, Cismontane woodland, Riparian woodland, Mesic, Serpentine (usually); 100-2,820 feet; May-July (August-October)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Iris longipetala</i> coast iris (Iridaceae)	--/--/4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps, Mesic; 0-1,970 feet; March-May (June)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Acanthomintha lanceolata</i> Santa Clara thorn-mint (Lamiaceae)	--/--/4.2	Chaparral, Cismontane woodland, Coastal scrub, Rocky; 260-3,935 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.

<i>Fritillaria agrestis</i> stinkbells (Liliaceae)	--/--/4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland, Clay, Serpentine (sometimes); 35-5,100 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Fritillaria liliacea</i> fragrant fritillary (Liliaceae)	--/--/1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland, Serpentine (often); 10-1,345 feet; February-April	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Malacothamnus arcuatus</i> arcuate bush-mallow (Malvaceae)	--/--/1B.2	Chaparral, Cismontane woodland; 50-1,165 feet; April-September	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Malacothamnus hallii</i> Hall's bush-mallow (Malvaceae)	--/--/1B.2	Chaparral, Coastal scrub; 35-2,495 feet; (April) May-September (October)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Sidalcea malachroides</i> maple-leaved checkerbloom (Malvaceae)	--/--/4.2	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland; 0-2,395 feet; (March) April-August	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Mielichhoferia elongata</i> elongate copper moss (Mielichhoferiaceae)	--/--/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest, Acidic (usually), Carbonate (sometimes), Metamorphic, Roadsides (often), Vernal Mesic (usually); 0-6,430 feet;	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Calandrinia breweri</i> Brewer's calandrinia (Montiaceae)	--/--/4.2	Chaparral, Coastal scrub, Burned areas, Disturbed areas, Loam (sometimes), Sandy (sometimes); 35-4,005 feet; (January) March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Clarkia lewisii</i> Lewis' clarkia (Onagraceae)	--/--/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal scrub; 100-3,920 feet; May-July	<b>Not expected.</b> Project Area does not support suitable habitat.

<i>Clarkia concinna</i> ssp. <i>automixa</i> Santa Clara red ribbons (Onagraceae)	--/--/4.3	Chaparral, Cismontane woodland; 295-4,920 feet; (April)May-June (July)	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Cypripedium fasciculatum</i> clustered lady's-slipper (Orchidaceae)	--/--/4.2	Lower montane coniferous forest, North Coast coniferous forest, Seeps (usually), Serpentine (usually), Streambanks; 330-7,990 feet; March-August	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes salty bird's-beak (Orobanchaceae)	--/--/1B.2	Marshes and swamps; 0-35 feet; June-October	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Collinsia multicolor</i> San Francisco collinsia (Plantaginaceae)	--/--/1B.2	Closed-cone coniferous forest, Coastal scrub, Serpentine (sometimes); 100-900 feet; (February) March-May	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Puccinellia simplex</i> California alkali grass (Poaceae)	--/--/1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; 5-3,050 feet; March-May	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Leptosiphon ambiguus</i> serpentine leptosiphon (Polemoniaceae)	--/--/4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Serpentine (usually); 395-3,710 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Leptosiphon grandiflorus</i> large-flowered leptosiphon (Polemoniaceae)	--/--/4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland, Sandy (usually); 15-4,005 feet; April-August	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Navarretia prostrata</i> prostrate vernal pool navarretia (Polemoniaceae)	--/--/1B.2	Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; 10-3,970 feet; April-July	<b>Not expected.</b> Project Area does not support suitable habitat.

<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower (Polygonaceae)	FE/--/1B.1	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub, Gravelly (sometimes), Sandy (sometimes); 10-985 feet; April-September	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Eriogonum argillosum</i> clay buckwheat (Polygonaceae)	--/--/4.3	Cismontane woodland; 490-2,625 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Eriogonum umbellatum</i> var. <i>bahiiforme</i> bay buckwheat (Polygonaceae)	--/--/4.2	Cismontane woodland, Lower montane coniferous forest, Rocky, Serpentinite (often); 2295-7,220 feet; July-September	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Stuckenia filiformis</i> ssp. <i>alpina</i> northern slender pondweed (Potamogetonaceae)	--/--/2B.2	Marshes and swamps; 985-7,055 feet; May-July	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Androsace elongata</i> ssp. <i>acuta</i> California androsace (Primulaceae)	--/--/4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland; 490-4,280 feet; March-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Delphinium californicum</i> ssp. <i>interius</i> hospital canyon larkspur (Ranunculaceae)	--/--/1B.2	Chaparral, Cismontane woodland, Coastal scrub; 640-3,595 feet; April-June	<b>Not expected.</b> Project Area does not support suitable habitat.
<i>Dirca occidentalis</i> western leatherwood (Thymelaeaceae)	--/--/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North Coast coniferous forest, Riparian forest, Riparian woodland, Mesic; 80-1,395 feet; January-March (April)	<b>Not expected.</b> Project Area does not support suitable habitat.

Notes:

Dates in parentheses are occasional bloom periods.

**1. Rarity Status Codes:**

E = Federally or State listed as Endangered

T = Federally or State listed as Threatened

R = State listed as Rare

**CRPR Codes**

CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere; CRPR List 1B = Plants rare, threatened or endangered in CA and elsewhere; CRPR 2B = Plants rare, threatened or endangered in California but more common elsewhere; CRPR 3 = More information is needed about plant; CRPR 4 = Plants of limited distribution, a watch list

CRPR: '.1' = Seriously threatened in CA; '.2' = Fairly threatened in CA; '.3' = Not very threatened in CA

**APPENDIX B**  
**REPRESENTATIVE SITE PHOTOGRAPHS**



**Photo 1.** Segment 242 and buffer area along Lafayette Street, facing north (3/3/22)



**Photo 2.** Five crimson bottlebrush trees within Segment 242 buffer area (eastern side), facing north (3/3/22)



**Photo 3.** Trees adjacent Segment 242 buffer area (eastern side), facing north (3/3/22)



**Photo 4.** Invasive sea fig plant within Segment 233 buffer area (eastern side), facing north (3/3/22)



**Photo 5.** Invasive sea fig plant and grasses within Segment 232 buffer area (eastern side), facing north (3/3/22)



**Photo 6.** Eastside Retention Basin property with sanitary sewer manhole at east terminus of Segment 231, facing east (3/3/22)



**Photo 7.** Constructed stormwater basin within Segment 232 buffer area, facing west (3/3/22)



**Photo 8.** Culvert leading to constructed stormwater basin within Segment 232 buffer area (3/3/22)



**Photo 9.** Disturbed dirt area within Segment 232 buffer area (between train tracks and Lafayette Street), facing north (3/3/22)



**Photo 10.** Sanitary sewer manholes at west terminus of Segment 232, facing east (3/3/22)



**Photo 11.** Ground squirrel burrows in dirt mound within Segment 232 buffer area, facing west (3/3/22)



**Photo 12.** Segment 232 buffer area, facing south (3/3/22)



**Photo 13.** Segment 232 buffer area, facing north (3/3/22)



**Photo 14.** Train tracks shared by Caltrans, ACE and Amtrak, and roadside of Lafayette Street, facing south (3/3/22)



**Photo 15.** Median strip within Segment 233 buffer area, facing southeast (3/3/22)



**Photo 16.** Two blue jacaranda trees within Segment 233 buffer area, facing south (3/3/22)



**Photo 17.** Segment 100 buffer area, facing northwest (3/3/22)



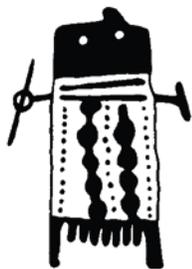
**Photo 18.** Ornamental plants within Segment 233 buffer area, facing east (3/3/22)



**Photo 19.** Sanitary sewer manholes at east terminus of Segment 100, facing northwest (3/3/22)

# Appendix C

## Cultural Resources Technical Report



May 16, 2022

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RE: Cultural Resources Review – Five Sanitary Sewer Repair Locations  
Lafayette Street and Mathew Street, City of Santa Clara, Santa Clara County

Dear Dr. Buising,

Please let this letter stand as Basin Research Associates' (BASIN) cultural resources review of five sanitary sewer repair projects within the City of Santa Clara (United States Geological Survey [hereafter USGS], Milpitas, Calif. 1980 T 6S R 1W, unsectioned and San Jose West, Calif. 1980, T 6S R 1W, Section 35 [Figs. 1-3]. The purpose of the project is to remediate existing Grade 4 and Grade 5 defects identified in the City's 2020 sanitary sewer condition assessment.

This review was undertaken to determine if significant if historic properties and/or unique archaeological resources (cultural resources) and tribal cultural resources as defined by the California Environmental Quality Act (CEQA) might be affected by the proposed sewer repairs.

CEQA (Public Resources Code 21000 et seq.) 1970, as amended and planning requirements of the City of Santa Clara require a lead agency to determine potential impacts on both historical and archaeological cultural resources eligible for the California Register of Historical Resources (CRHR) and mitigate impacts on historically or culturally significant resources affected by a project. Under CEQA, a project is considered to have a significant effect if it would disrupt or adversely affect one or more properties of historic or cultural significance to the community (CEQA Section 21084.1 and CEQA *Guidelines*). CEQA requires a lead agency to determine if a project will have a significant effect on the environment and to assess possible impacts.

This report provides a summary of a records search completed by the California Historical Resources Information System, Northwest Information Center (CHRIS/NWIC), Sonoma State University, Rohnert Park; a short regulatory review; summary background contexts; the results of the Native American Heritage Commission's (NAHC) review of the *Sacred Lands File* (SLF); outreach to local Native Americans identified by the NAHC, and, findings and recommendations based on pertinent literature and archival information and maps. A field review was not conducted due to the location of the repairs within paved generally paved streets except for the

east end of Segment 100 which is located in an unpaved area (the highly disturbed and graded parking area/frontage associated with the City's Eastside Retention Basin facility).

## **PROJECT LOCATION AND DESCRIPTION**

The five projects are located within the northeast (4 projects) east-central (1 project) areas of the City of Santa Clara [Figs. 2-5].

Segment 100 – within Mathew Street west of De La Cruz Boulevard

Segment 231 - within a utility easement that crosses Lafayette Street just south of Highway 237

Segments 232 and 233 - within Lafayette Street immediately to the south of Segment 231

Segment 242 - within Lafayette Street north of Tasman Drive

The sanitary sewer and associated manhole repairs/replacement include:

Segment 100 (Mathew Street) - remove 166 linear feet (lf) of existing 18-inch-diameter vitrified clay pipe (VCP) sewer line and replace it with 18-inch-diameter polyvinyl chloride (PVC) sewer line; remove and replace sanitary sewer manhole (SSMH) 57-35 at west terminus of Segment

Segment 231 (Lafayette Street) - install 278 lf of cured-in-place-pipe (CIPP) lining in existing 42-inch-diameter reinforced concrete pipe (RCP) sewer line; replace cones of SSMH 114-14 and SSMH 114-23 at termini of Segment

Segment 232 (Lafayette Street) - install 437 lf of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cone of SSMH 104-9 at south terminus of Segment

Segment 233 (Lafayette Street) - install 491 lf of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cone of SSMH 104-15 at south terminus of Segment

Segment 242 (Lafayette Street) - install 430 lf of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cones of SSMH 104-17 and SSMH 104-22 at termini of Segment

## **REGULATORY CONTEXT**

Cultural resources include prehistoric and historic archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events or sites of traditional and/or cultural importance to various groups. The analysis of cultural resources can provide valuable information on the cultural heritage of both local and regional populations.

Cultural resources may be determined significant or potentially significant in terms of national, state, or local criteria either individually or in combination. Resource evaluation criteria are determined by the compliance requirements of a specific project.

## STATE OF CALIFORNIA

This report has been prepared to meet applicable California Environmental Quality Act (CEQA) and the Historic Preservation Goals and Policies of the City of Santa Clara's General Plan for historic properties (cultural resources) which require the identification and evaluation of cultural resources that could be affected by the project.

CEQA, as codified in PRC Section 21000 et seq. and implemented by the CEQA Guidelines (14 California Code of Regulations Section 15000 et seq.), is the principal statute governing environmental review of projects in California. CEQA defines a historical resource as a property listed in, or eligible for listing in, the California Register of Historical Resources (CRHR); included in a qualifying local register; or determined by a lead agency to be historically significant. In order to be considered a historical resource, a property must be old enough to allow an understanding of the historic importance of the resource and obtain a scholarly perspective on the events or individuals associated with the resource, which is generally at least 50 years. Section 21084.1 of the PRC and Section 15064.5 of the CEQA Guidelines define a historical resource for purposes of CEQA as the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the California Register (PRC Section 5024.1).
2. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g). Such resources will be presumed to be historically or culturally significant. Public agencies must treat such resources as significant, unless the preponderance of evidence demonstrates that they are not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the California Register (PRC Section 5024.1).
4. The fact that a resource is not listed in or determined to be eligible for listing in the California Register, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be a historical resource, as defined in PRC Sections 5020.1(j) or 5024.1.

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that "unique archaeological resource" means 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 meets one or more of the following criteria:

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.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA requires lead agencies to determine if a project would have a significant effect on historical resources or unique archaeological resources. If a resource is neither a unique archaeological resource nor a historical resource, the CEQA Guidelines note that the effects of a project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5[c][4]). In addition, projects that comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties benefit from a regulatory presumption under CEQA that they would have a less-than-significant impact on a historical resource (14 California Code of Regulations 15126.4[b][1]). Projects that do not comply with the Secretary's standards may or may not cause a substantial adverse change in the significance of a historical resource and may be subject to further analysis to assess whether they would result in material impairment of a historical resource's significance.

Under CEQA, a substantial adverse change in the significance of a historical resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Actions that would materially impair the significance of a historical resource are any actions that would demolish or adversely alter the physical characteristics that convey the property's historical significance and qualify it for inclusion in the California Register of Historical Resources, the National Register of Historical Places (NRHP), or in a local register or survey that meets the requirements of PRC Sections 5020.1(k) and 5024.1(g).

#### *California Register of Historical Resources (CRHR)*

The CRHR is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and indicating which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The CRHR criteria are based on the NRHP criteria (PRC Section 5024.1[b]). Certain resources are determined by CEQA to be automatically included in the CRHR, including California properties that were formally eligible for or listed in the NRHP. To be eligible for the CRHR as a historical resource, a resource must be significant at the local, state, and/or federal level under one or more of the following evaluative criteria, as defined in PRC Section 5024.1(c):

1. The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. The resource is associated with the lives of persons important in our past.
3. The resource embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.

4. The resource has yielded, or may be likely to yield, information important in prehistory or history.

A significant historical resource must possess integrity in addition to meeting the significance criteria to be considered eligible for listing in the CRHR. Consideration of integrity for evaluation of CRHR eligibility follows the definitions and criteria from National Park Service *National Register Bulletin 15*.

#### *California Native American Historic Resources Protection Act*

The California Native American Historic Resources Protection Act of 2002 imposes civil penalties, including imprisonment and fines of up to \$50,000 per violation, for persons who unlawfully and maliciously excavate, remove, destroy, injure, or deface a Native American historic, cultural, or sacred site that is listed or may be listed in the CRHR.

#### *Assembly Bill 52*

Tribal cultural resources were originally identified as a distinct CEQA environmental category with the adoption of AB 52 in September 2014. For all projects that are subject to CEQA that received a notice of preparation, notice of negative declaration, or mitigated negative declaration on or after July 1, 2015, AB 52 requires the lead agency for a proposed project to consult with the geographically affiliated California Native American tribes. The legislation creates a broad, new category for environmental resources, “tribal cultural resources,” which must be considered under CEQA. AB 52 requires a lead agency to not only consider the resource’s scientific and historical value but also whether it is culturally important to a California Native American tribe.

AB 52 defines tribal cultural resources as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included in or determined to be eligible for inclusion in the CRHR; included in a local register of historical resources, as defined in PRC Section 5020.1(k); or, determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria of PRC Section 5024.1(c) (CEQA Section 21074). A cultural landscape that meets the definition of a tribal cultural resource is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. A historical resource described in PRC Section 21084.1; a unique archaeological resource, as defined in subdivision (g) of PRC Section 21083.2; or a non-unique archaeological resource,” as defined in subdivision (h) of PRC Section 21083.2 may also be a tribal cultural resource if it conforms to the definition of a tribal cultural resource.

AB 52 also sets up an expanded consultation process. For projects initiated after July 1, 2015, lead agencies are required to provide notice of the proposed projects to any tribe that is traditionally and culturally affiliated with the geographic area that requested to be informed by the lead agency, following PRC Section 21018.3.1(b). If, within 30 days, a tribe requests consultation, the consultation process must begin before the lead agency can release a draft environmental document. Consultation with the tribe may include discussion of the type of review necessary, the significance of tribal cultural resources, the significance of a project’s impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. The consultation process will be deemed concluded when either (a) the parties

agree to mitigation measures or (b) any party concludes, after a good-faith effort, that an agreement cannot be reached. Any mitigation measures agreed to by the tribe and lead agency must be recommended for inclusion in the environmental document. If a tribe does not request consultation, or otherwise assist in identifying mitigation measures during the consultation process, a lead agency may still consider mitigation measures if the agency determines that a project will cause a substantial adverse change to a tribal cultural resource.

*Public Resources Code Section 5097.98*

Section 5097.98 of the PRC stipulates that whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and recommend to the owner or the person responsible for the excavation work means for treating or disposing of, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 24 hours of their notification by the NAHC. The recommendation may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

CITY OF SANTA CLARA

The *City of Santa Clara 2010-2035 General Plan* (hereafter *General Plan*) Section 5.6 Historic Preservation provides the local regulatory context for the proposed project. The City has established a Historical and Landmarks Commission and obtained recognition by the State Office of Historic Preservation of the City as a Certified Local Government (CLG). Historic preservation policies support the two Major Strategies of the General Plan to enhance the City's identity and to preserve existing neighborhoods. The City currently uses the following tools to evaluate historic resources:

- The Historical and Landmarks Commission advises the City Council on all matters related to historical sites and issues. As required by the State Certified Local Government program, the City has established a list of Architecturally or Historically Significant Properties which is included in Appendix 8.9 of the General Plan, and is one of the tools used for the Commission's recommendations.
- The Criteria for Local Significance (*General Plan* Appendix 8.9), establishes evaluation measures, to ensure that the resource is at least 50 years old and that the property is associated with an important individual or event, an architectural innovation, and/or an archaeological contribution in order to be deemed significant. The City maintains a list of qualified historic consultants for these evaluations.

*General Plan* – Section 5.6.3 Archaeological and Cultural Resources Goals and Policies

Section 5.6.3 applies to archaeological resources. No standing historic buildings and/or structures are present within the bounds of the project area due to previous development. The following Goals and Policies ensure that these resources are protected, now and into the future,

and that appropriate mitigation measures to unforeseen impacts are enforced.

#### Archaeological and Cultural Resources Goals

- 5.6.3-G1 Protection and preservation of cultural resources, as well as archaeological and paleontological sites.
- 5.6.3-G2 Appropriate mitigation in the event that human remains, archaeological resources or paleontological resources are discovered during construction activities.

#### Archaeological and Cultural Resources Policies

- 5.6.3-P1 Require that new development avoid or reduce potential impacts to archaeological, paleontological and cultural resources.
- 5.6.3-P2 Encourage salvage and preservation of scientifically valuable paleontological or archaeological materials.
- 5.6.3-P3 Consult with California Native American tribes prior to considering amendments to the City's General Plan.
- 5.6.3-P4 Require that a qualified paleontologist/archaeologist monitor all grading and/or excavation if there is a potential to affect archeological or paleontological resources, including sites within 500 feet of natural water courses and in the Old Quad neighborhood.
- 5.6.3-P5 In the event that archaeological/paleontological resources are discovered, require that work be suspended until the significance of the find and recommended actions are determined by a qualified archaeologist/paleontologist.
- 5.6.3-P6 In the event that human remains are discovered, work with the appropriate Native American representative and follow the procedures set forth in State law.

## **BACKGROUND CONTEXT**

### **NATIVE AMERICAN - Prehistoric**

Cultural resources are traces of human occupation and activity. In northern and central California, cultural resources extend back in time for at least 9000-11,500 years with Native American occupation and use of central California extending over 5000-8000 years and possibly longer. The general study area appears to have been situated in a favorable environment for prehistoric use with water and a variety of ecological niches available for resource exploitation in the alluvial plain, foothills and bay margins.

Prehistoric site types recorded in the valley include habitation sites ranging from villages to temporary campsites, stone tool and other manufacturing areas, quarries for tool stone procurement, cemeteries usually associated with large villages, isolated burial sites, rock art locations, bedrock mortars or other milling feature sites, and trails (Elsasser 1986).

Archaeological information for the general Bay Area suggests a slow steady increase in the prehistoric population over time with an increasing focus on permanent settlements with large populations in later periods. This change from hunter-collectors to an increased sedentary lifestyle is due to more efficient resource procurement as well as a focus on staple food

exploitation, the increased ability to store food at village locations, and the development of increasing complex social and political systems including long-distance trade networks.

Archaeological research in the region has been interpreted using several chronological schemes based on stratigraphic differences and the presence of various cultural traits. A three-part cultural chronological sequence, the Central California Taxonomic System (CCTS) was developed by archaeologists to explain local and regional cultural change in prehistoric central California from about 4,500 years ago to the time of European contact (Lillard et al. 1939; Beardsley 1948, 1954). This classification scheme, consisting of three horizons - Early, Transitional and Late, has been revised although the prior nomenclature (Early, Middle, Late Horizon) is still in common use (see Fredrickson 1994). Moratto (1984) suggests the Early Horizon dated to ca. 4,500 to 3,500/3,000 years ago with the Middle Horizon dating to circa 3,500 to 1,500 years ago and the Late Horizon dating to circa 1,500 to 250 years AGP. Allen (1999) has presented a four-period chronological framework for the Northern Santa Clara Valley/Southern San Francisco Bay region using the Bennyhoff and Hughes (1987) taxonomy as revised by Milliken and Bennyhoff (1993) and Fredrickson (1994) (see Table 1).

**TABLE 1**  
Comparison of California Cultural Period with Temporal Phases of Central California  
(Allen 1999)

<i>Cultural Periods</i> (Fredrickson 1994)	<b>Dating Scheme B1</b> (Bennyhoff and Hughes 1987)	
	<b>Year</b>	<b>Time Period</b>
EMERGENT PERIOD	AD 1800	Historic Period
	AD 1700	Late Period Phase 2-B
	AD 1500	Late Period Phase 2-A
	AD 1300	Late Period Phase 1-C
	AD 1100	Late Period Phase 1-B
		Late Period Phase 1-A
UPPER ARCHAIC PERIOD	AD 900	Middle/Late Period Transition
	AD 700	Middle Period Terminal Phase
	AD 500	Middle Period Late Phase
	AD 300	Middle Period Intermediate Phase
	AD 100	Middle Period Early Phase
	200 BC	Early/Middle Period Transition
MIDDLE ARCHAIC PERIOD	500 BC	Early Period
	3000 BC	

**TABLE 1, con't**  
 Comparison of California Cultural Period with Temporal Phases of Central California  
 (Allen 1999)

<i>Cultural Periods</i> (Fredrickson 1994)	<b>Dating Scheme B1</b> (Bennyhoff and Hughes 1987)	
	<b>Year</b>	<b>Time Period</b>
LOWER ARCHAIC PERIOD	6000 BC	
PALEOINDIAN PERIOD	8000 BC	

General overviews and perspectives on the regional prehistory including chronological sequences can be found in Wallace (1978) C. King (1978), Moratto (1984), Elsasser (1978, 1986), Allen (1999), Jones and Klar (2007), and Milliken et al. (2007). In addition, Hylkema (2002) provides detail regarding environment and chronology for selected archaeological sites from the southern San Francisco Bay and the peninsula coast.

#### NATIVE AMERICAN - Ethnographic

The aboriginal inhabitants of the study area belonged to a group known as the *Costanoan*, who occupied the area from the central California coast as far east as the Diablo Range. The descendants of these Native Americans now prefer to be called *Ohlone* (Galvan 1967/1968; Margolin 1978). In 1770 the Ohlone lived in approximately 50 separate and politically autonomous tribelets with each group having one or more permanent villages surrounded by a number of temporary camps. Physiographic features usually defined the territory of each group which generally supported a population of approximately 200 persons with a range of between 50-500 individuals (Kroeber 1925:465, Fig. 42; Levy 1978:485, 487).

The four northern project segments - Segments 231-233 and 242- are within the *Tamyen* (*Tamien*) tribelet territory of the Ohlone in the *San Francisco Solano* District (the area located north of Mission Santa Clara). Project Segment 100 is located in *Our Mother Santa Clara* District just southwest of Mission Santa Clara (Levy 1978:485, Fig. 1; Milliken 1995:229, Map 5, 256; Skowronek and Wizorek 1977:55, 77). Milliken (2006:27, Fig. 5) place the northern project segments within *Alviso/San Francisco Solano* and the single southern project segment within the *Santa Clara/Tamien*.

Mission Santa Clara, founded in 1777 and variously relocated and rebuilt, was a major focus of Native American residency and conversion in the overall study area. However, no ethnographic settlements were located in, adjacent or near the project with the exception of the Native Americans associated with the relocated Mission Santa Clara approximately 2.5 miles to the southeast. Reportedly, the Mission had the largest Native American population of the missions established in Alta California (CAL/OHP 1990:231, SHL #338; see Hylkema 1995).

No known Native American ethnographic settlements (villages), trails, traditional use areas or contemporary use areas have been identified in, adjacent or near the project (e.g., Elsasser

1986:48, Table 4, Fig. 10; CAL/OHP 1988; Shoup and Milliken 1999:Fig. 2).

Extensive ethnographic data for the San Francisco Bay Region are lacking, and the aboriginal lifeway apparently disappeared by approximately 1810 due to introduced diseases, a declining birthrate, the cataclysmic impact of the mission system and the later secularization of the missions by the Mexican government. The aboriginal inhabitants of the San Francisco Bay Region were transformed from hunters and gatherers into agricultural laborers who lived at the missions and worked with former neighboring groups (e.g., Ohlone, Bay Miwok, Esselen, and Yokuts). Later, because of the secularization of the Missions by Mexico in 1834, most of the aboriginal population gradually moved to ranchos to work as manual laborers. The resulting multi-ethnic Indian communities provided the ethnological data collected from 1878 to 1933 (Cook 1957:143; Levy 1978:486) that was used to develop the initial cultural history of the Native Californians.

For a more extensive review of the Native American inhabitants see Kroeber (1925), Harrington (1942), Galvan (1967/1968), King and Hickman (1973), C. King (1974, 1977, 1994), Levy (1978), Margolin (1978), Mayfield et al. (1981), Bean (1994), and Milliken (1995, 2006, 2008).

## HISTORIC PERIOD

The history of the Santa Clara Valley can be divided into the Age of Exploration, the Hispanic Period (Spanish Period 1769-1821 and the Mexican Period (1822-1848), and the American Period (1848-onward). During the Hispanic Period, Spanish government policy in northwestern New Spain was directed at the founding of *presidios* (forts), missions, and *pueblos* (secular towns) with the land held by the Crown whereas later Mexican policy (1822-1846) stressed individual ownership of the land with grants of vast tracts of land to individuals. The American Period focused on development and growth - a pattern that continues into the 21<sup>st</sup> Century.

### Hispanic Period (1769-1848)

The Spanish philosophy of government in northwestern New Spain was directed at the founding of presidios, missions, and secular towns with the land held by the Crown (1769-1821). The later Mexican policy stressed individual ownership of the land. After the secularization of the missions was declared by Mexico in 1833, vast tracts of the mission lands were granted to individual citizens (Hart 1987).

Spanish explorers in the late 1760s and 1770s were the first Europeans to traverse the Santa Clara Valley. Expedition parties likely followed Native American trails through the study area. The first party, led by Gaspar de Portola and Father Juan Crespi, arrived in the Alviso area in the fall of 1769. Sergeant Jose Francisco Ortega of their party explored the eastern portion of San Francisco Bay and likely forded both the mouth of the Guadalupe River and Coyote Creek. The following year, Pedro Fages led another party through the Santa Clara Valley and in 1772 Fages returned with Crespi and in 1774, Fr. Francisco Palou. Hickman (1974) notes that Palou likely crossed San Tomas Aquinas and Saratoga "arroyos" on November 27, 1774 and that following Bolton (1926:410), Palou's camp was on Calabasas Creek. A few years later, in 1776, Juan Bautista de Anza and Father Pedro Font traveled through the region and their favorable reports led to the establishment of both Mission Santa Clara and the Pueblo San Jose de Guadalupe in 1777.

*Mission Santa Clara de Asis*, the eighth of the 21 missions founded in California and one of seven missions located within Ohlone territory, would have been the mission with the greatest impact on the aboriginal population living in the project vicinity (Beck and Haase 1974; James and McMurry 1933; Hart 1987; Brown 1994; USNPS 1995).

Segments 231-233 are within the former *Embarcadero de Santa Clara*, granted by Governor Pico on June 18, 1845, to Barcellia Bernal for approximately 177 acres. The waterfront of the Embarcadero was originally developed to allow water access/transport and functioned as one of the foremost points of access for the trade that coursed up and down the Guadalupe River. The name of the embarcadero was changed to Alviso about 1838. The rancho was not patented until 1863 to Barcellia Bernal for 196.25 acres. Later Bernal and her husband Juan Martin claimed an additional 4438 acres in the same area but the claim was rejected (Hendry and Bowman 1940:870-871).

Segment 242 was within the former *Rancho Ulistac*, granted to three Native Americans named Marcello, Pio and Cristobal in 1845 by Governor Pico for approximately 2219 acres. The land was sold in 1850 to Jacob D. Hoppe and patented to his heirs in 1868 (Freeman and Reed 1857-1866). Nothing is known of the three Native Americans except that Marcello helped as a boy in the building of the first mission (Hendry and Bowman 1940:872-873).

Segment 100 was situated within ungranted lands west of the *El Portero de Santa Clara* (St. Clare's Colt (or horse) Pasture), a former Mission Santa Clara holding that "reverted to public domain after secularization of the missions

The area surrounding the various project segments was probably used for grazing cattle as the export of tallow and hides was a major economic pursuit of the Santa Clara Valley and California during the Hispanic Period (Freeman and Reed 1857-1866; US/BLM [GLO] 1851-1866; Hendry and Bowman 1940:Map of Santa Clara County; Arbuckle and Rambo 1968:15; USGS Milpitas, Calif. 1980; USGS San Jose West, Calif. 1980).

No known Hispanic Period resources - dwellings or features (e.g., corrals, orchards, etc.) - have been identified within or adjacent to the five project segments.

#### American Period (1848-Contemporary)

California became a United States territory in 1848 through the Treaty of Guadalupe Hidalgo that ended the Mexican War of 1846-1847. California was not formally admitted as a state until 1850. In the mid-19<sup>th</sup> century, the majority of the rancho and pueblo lands and some of the ungranted land in California were subdivided as the result of the American takeover, population growth, and the confirmation of Mexican Period property titles. Growth can be attributed to the Gold Rush (1848), followed by the completion of the transcontinental railroad (1869) and local railroads. Still later, the development of the refrigerator railroad car (ca. 1880s) used for the transport of agricultural produce to distant markets, had a major impact on the Santa Clara Valley. During the later American Period and into the Contemporary Period (ca. 1876-1940s), fruit production became a major industry. This predominance of fruit production/processing held steady until after World War II. In recent decades this agrarian land-use pattern has been gradually displaced by residential housing, commercial centers, and the development of research

and development and manufacturing associated with the electronics industry leading to the designation of the general region as the "Silicon Valley." Within the Santa Clara Valley, the City of San Jose served as a County seat as well as a financial and social center (Broek 1932; Hart 1987).

The first EuroAmerican American (non-Hispanic) settlers arrived in 1846 and 1847. Prior to 1846 almost all of the buildings had been built for the Mission; after 1846 buildings were erected by Americans or under American influence including an adobe tannery in 1849. The secular town of Santa Clara was surveyed by William Campbell in 1847. The town government was organized and its first duly elected officials took office in 1852 at which time approximately 200 individuals resided in the town. Incorporation did not take place until 1872. The Santa Clara post office was established prior to July 28, 1851.

Early American Era buildings included a hotel and 23 pre-fabricated houses imported from New England. In addition to Roman Catholic services at the Mission, other Churches were built for Presbyterian, Methodist, and Episcopal denominations. Early educational institutions consisted of Santa Clara College chartered in 1855; California Wesleyan College, later known as University of Pacific in 1851; and, The Female Institute in 1853. The town was a fruit packing center from the 1870s through World War II. The arrival and expansion of the railroad and later road system facilitated the growth of heavy industry. Post-World War II infill subdivisions and tract housing were built with concomitant increases in population and expanded geographically. The City of 8,000 inhabitants in 1940 increased by the early 1980s to over 88,000 residents with a present population of nearly 120,000. The City is both a residential and commercial center and is the headquarters of a number of Silicon Valley companies as well as the Levi's Stadium and Santa Clara University (Bowen 1866; Munro-Fraser 1881:550-552; *San Jose Mercury* 1896:64, 70; Hendry and Bowman 1940:731-732; Thompson and West 1876:15 1/2-3/4, 36, 43; Sawyer 1922:277-279; Wyatt and Arbuckle 1948:37; Hart 1987:453; Patera 1991:191; Garcia 1997:8, 54, 58, 61, 97; USGS 1980:San Jose West).

## RESEARCH PROTOCOLS

A prehistoric and historic site record and literature search was completed by the California Historical Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park (CHRIS/NWIC File No. 21-0235 by Akmenkalns 8/26/21) for a 500-foot radius of each segment (see Attachments). In addition, several specialized listings for cultural resources were consulted and included:

*National Register of Historic Places* (NRHP) listings in Santa Clara County (USNPS 2015, 2017, 2021);

*California History Plan* (CAL/OHP 1973);

*California Inventory of Historic Resources* (CAL/OHP 1976);

*Five Views: An Ethnic Sites Survey for California* (CAL/OHP 1988);

OHP [Office of Historic Preservation] *Built Environment Resources Directory* (BERD) for Santa Clara County includes National Historical Landmarks, National Register of Historic Places, Federal (Agency Nominations, California Register of Historical Resources, California Historical Landmarks and California Points of Historical Interest listings);

*Archeological Determinations of Eligibility for Santa Clara County.*

*Listed California Historical Resources – Santa Clara County [including National Register, State Landmark, California Register, and Point of Interest] (CAL/OHP 2021c).*

## NATIVE AMERICAN

The Native American Heritage Commission (NAHC) was contacted for a review of the Sacred Lands Inventory (Busby 2022a). The results of the SLF review were positive (Campagne 2022). Letters and/or emails were sent to the 11 locally knowledgeable Native American individuals/organizations identified by the NAHC to determine if any potential resources of interest to the Native American community were present (Busby 2022b-1) (see Attachments).

Valentin Lopez, Chairperson, Amah Mutsun Tribal Band, Galt;

Irenne Zwierlein, Chairperson, Amah Mutsun Tribal Band of Mission San Juan Bautista, Lakeport;

Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan; Hollister;

Kanyon Sayers-Roods, Indian Canyon Mutsun Band of Costanoan, San Jose;

Monica Arellano, Vice Chairwoman, Muwekma Ohlone Indian Tribe of the SF Bay Area, Castro Valley;

Katherine Perez, Chairperson, North Valley Yokuts Tribe, Linden;

Timothy Perez, North Valley Yokuts Tribe, Linden;

Andrew Galvan, The Ohlone Indian Tribe, Fremont;

Kenneth Woodrow, Chairperson, Wuksache Indian Tribe/Eshom Valley Band; Salinas;

Quirina Luna Geary, Chairperson, Tamien Nation, San Jose; and,

Johnathan Wasaka Costillas, THPO, Tamien Nation, Clearlake Oaks.

No responses were received as of May 16, 2022.

The state's *CEQA Guidelines* encourage early consultation with Native American tribes traditionally and culturally affiliated with the area where a proposed project will take place. Section 21080.3.1 of the CEQA statute, signed into law in 2015 (AB 52), requires lead agencies to consult with traditionally and culturally affiliated Native American tribes prior to the release of a CEQA document if (1) the tribe has requested, in writing, to be formally notified of projects, and (2) the tribe responds, in writing, within 30 days of receiving notification.

No tribes are on file with the City of Santa Clara that have requested formal notification from the City. However, the City routinely conducts outreach to local tribal entities for upcoming projects. It has reached out to the NAHC to verify contacts for tribes traditionally and culturally affiliated with the project area, and has sent letters advising those contacts of the upcoming project and soliciting early comments and input on concerns related to tribal cultural resources. The results will be included in the *Initial Study/Mitigated Negative Declaration* currently in preparation.

## OTHER AGENCIES

No other agencies, departments or local historical societies were contacted regarding landmarks, potential historic sites or structures due to the informal nature of the review.

## RECORDS SEARCH RESULTS

The archival information provided by the CHRIS/NWIC was reviewed and the 11 reports on or adjacent to the five segments were checked for the presence/absence of archaeological resources. No recorded archaeological resources are within or within 500 feet of the proposed sanitary sewer repair alignments (see Table 1).

**TABLE 1**  
Sanitary Sewer Segments and Cultural Resources

Segment	Resources On/Adjacent	Resources within 500 ft	Reports On/Adjacent	Comment
100	None	None	S-18377 (N) Cartier et al. 1996	
100	None	None	S-19072 (P) Busby et al 1996a-b; Busby 1999	HPTP South Bay Water Recycling Project - no recorded sites within proposed alignments
100	None	None	S-35004 (N) Holman and Alexander 2008	
231	None	None	S-12032 (P) Banet and Ross 1990	Proposed Santa Clara Ball Park - no recorded sites within proposed alignments
231 & 232	None	None	S-07995 (P) Gross 1985, 1986a-b; King 1986	SR 237 Review - no recorded sites within proposed alignments
231, 232, 233, 242	None	None	S-19424 (N) Holson 1997	

## LISTED HISTORIC RESOURCES

No listed, determined or pending archaeological sites, significant local, state or federal historic properties, landmarks, etc. have been identified within or adjacent to the project segments.

## ARCHAEOLOGICAL SENSITIVITY

There appears to be a low prehistoric and historic archaeological sensitivity within the proposed project segments based on the absence of recorded archaeological sites and a summary review of the available archaeological report indicating negative results for the various segments. Urban development over the past 85+ years has impacted the various segments.

## FIELD INVENTORY

A field review was not conducted. The repairs are generally located within paved generally paved streets and within the alignment of existing sanitary sewer lines and manholes. The east end of Segment 100 is located in an unpaved area (the highly disturbed and graded parking area/frontage associated with the City's Eastside Retention Basin facility) [see Figs. 3-5].

## FINDINGS

The intent of this cultural resources review was to identify historic properties (prehistoric and historic resources) within or adjacent to the five project segments which may be listed,

determined or potentially eligible for inclusion on the California Register of Historical Resources (CRHR) and which could be affected by the proposed project. The following findings apply based on the results of the archaeological research.

- No prehistoric, combined prehistoric and historic, and/or Hispanic or American era historic archaeological sites have been recorded within or adjacent to the project.
- Eleven (11) cultural resources reports on file with the CHRIS/NWIC include or are adjacent to the project segments. All are negative for cultural resources within or adjacent to the project segments.
- No known Native American villages, trails, traditional use areas or contemporary use areas and/or other features of cultural significance have been identified within or immediately adjacent to the project site.
- No known Hispanic Period expeditions, adobe dwellings, or other structures, features, etc. have been reported within or adjacent to the project site.
- No American Period archaeological sites have been recorded or reported within or adjacent to the project site.
- No local, state or federal historically or architecturally significant structures, landmarks, or points of interest have been identified within or adjacent to the proposed project site.
- No California Register of Historic Resources listed, determined or potential archaeological sites, significant local, state or federal historic properties, landmarks, etc. have been identified within or adjacent to the proposed project site.
- The potential for the inadvertent discovery of significant subsurface archaeological resources during development is considered low based on the archival records review and prior disturbance from the installation of the existing sanitary sewer lines and manholes.

## MANAGEMENT RECOMMENDATIONS

The proposed sanitary sewer repairs can proceed as planned as they will not affect any known historic properties or unique archaeological resources. No subsurface testing for buried archaeological resources appears necessary due to the low sensitivity and previous sewer installation impacts. The following post-review protection measures are recommended.

- (a) The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried prehistoric<sup>1</sup> or historic<sup>2</sup>

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1. Significant prehistoric cultural resources may include:

- a. Human bone - either isolated or intact burials.
- b. Habitation (occupation or ceremonial structures as interpreted from rock rings/features, distinct ground depressions, differences in compaction (e.g., house floors).
- c. Artifacts including chipped stone objects such as projectile points and bifaces; groundstone artifacts such as manos, metates, mortars, pestles, grinding stones, pitted hammerstones; and, shell and bone artifacts including ornaments and beads.

cultural resources including prehistoric Native American burials.

- (b) The project proponent shall retain a Professional Archaeologist on an “on-call” basis during ground disturbing construction for other areas of the project site to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under the California Environmental Quality Act (CEQA).
- (c) If the Professional Archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource under CEQA, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommend mitigation measures to mitigate to a less-than significant impact in accordance with California Public Resources Code Section 15064.5. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal *Archaeological Monitoring Plan* (AMP) and/or *Archaeological Treatment Plan* (ATP) that may include data recovery may be recommended by the Professional Archaeologist if significant archaeological deposits are exposed during ground disturbing construction. Development and implementation of the AMP and ATP and treatment of significant cultural resources will be determined by the project proponent in consultation with any regulatory agencies.
- (d) The treatment of human remains and any associated or unassociated funerary objects discovered during any soil-disturbing activity within the project site shall comply with applicable State laws pursuant to California Public Resources Code Sections 5097.94, 5097.98, and 5097.99. This shall include immediate notification of the appropriate county Coroner/Medical Examiner and the project proponent.
- (e) A *Monitoring Closure Report* shall be filed with the project proponent at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken.

- 
- d. Various features and samples including hearths (fire-cracked rock; baked and vitrified clay), artifact caches, faunal and shellfish remains (which permit dietary reconstruction), distinctive changes in soil stratigraphy indicative of prehistoric activities.
  - e. Isolated artifacts

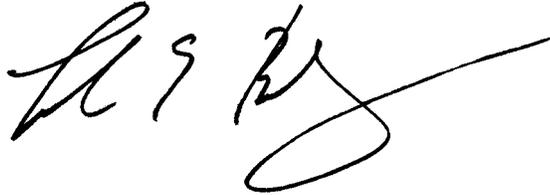
- 2. Historic cultural materials may include finds from the late 19th through early 20th centuries. Objects and features associated with the Historic Period can include.
  - a. Structural remains or portions of foundations (bricks, cobbles/boulders, stacked field stone, postholes, etc.).
  - b. Trash pits, privies, wells and associated artifacts.
  - c. Isolated artifacts or isolated clusters of manufactured artifacts (e.g., glass bottles, metal cans, manufactured wood items, etc.).
  - d. Human remains.

In addition, cultural materials including both artifacts and structures that can be attributed to Hispanic, Asian and other ethnic or racial groups are potentially significant. Such features or clusters of artifacts and samples include remains of structures, trash pits, and privies

**CLOSING REMARKS**

If I can provide any additional information or be of further service please don't hesitate to contact me.

BASIN RESEARCH ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'C. I. Busby', with a long horizontal flourish extending to the right.

Colin I. Busby, Ph.D., RPA  
Principal

CIB/dg  
Enclosures

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Abbreviations

n.d. no date            v.d. various dates            N.P. no publisher noted  
n.p. no place of publisher noted

CHRIS/NWIC, Sonoma State University, Rohnert Park is used for archival material on file at the California Historical Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park.

# **ATTACHMENTS**

## **FIGURES**

- FIGURE 1 General Project Location (ESRI World Street Map)
- FIGURE 2A Project Location - Segment 100 - T6S R1W, Sec 35 (USGS Milpitas, Calif. 1980 and San Jose West, Calif. 1980)
- FIGURE 2B Project Locations - Segments 231, 232, 233, & 242 - T6S R1W unsectioned (USGS Milpitas, Calif. 1980)
- FIGURE 3A Repair Location - Segment 100 (ESRI World Street Map)
- FIGURE 3B Repair Locations - Segments 231, 232, 233 & 242 (ESRI World Street Map)
- FIGURE 4A Location of Segment 100
- FIGURE 4B Location of Segments 231, 232, 233 and 242
- FIGURE 5A Proposed Repairs at Segment 100
- FIGURE 5B Proposed Repairs at Segment 231
- FIGURE 5C Proposed Repairs at Segments 232 & 233
- FIGURE 5D Proposed Repairs at Segment 242

## **NATIVE AMERICAN OUTREACH**

- LETTER Request to Native American Heritage Commission (NAHC) for Review of Sacred Lands File (SLF)
- LETTER Response from NAHC in Regard to SLF Review
- LETTER Letters to Native American Individuals and Groups Recommended by the NAHC

## **CHRIS/NWIC SEARCH RESULTS**

- SEARCH CHRIS/NWIC File No. 21-0235. Dated 8/26/2021. (No Confidential Information)

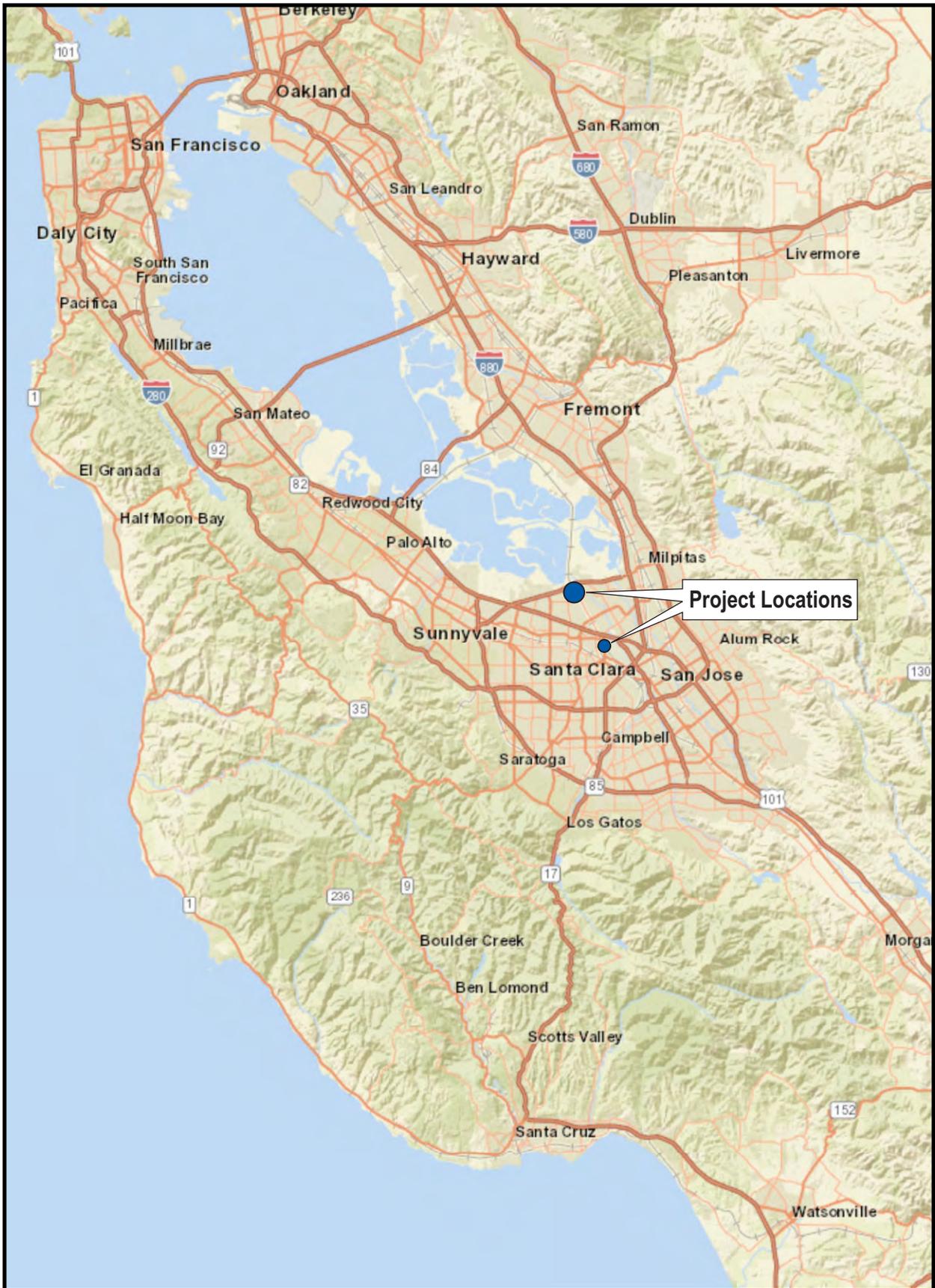


Figure 1: General Project Location (ESRI World Street Map)

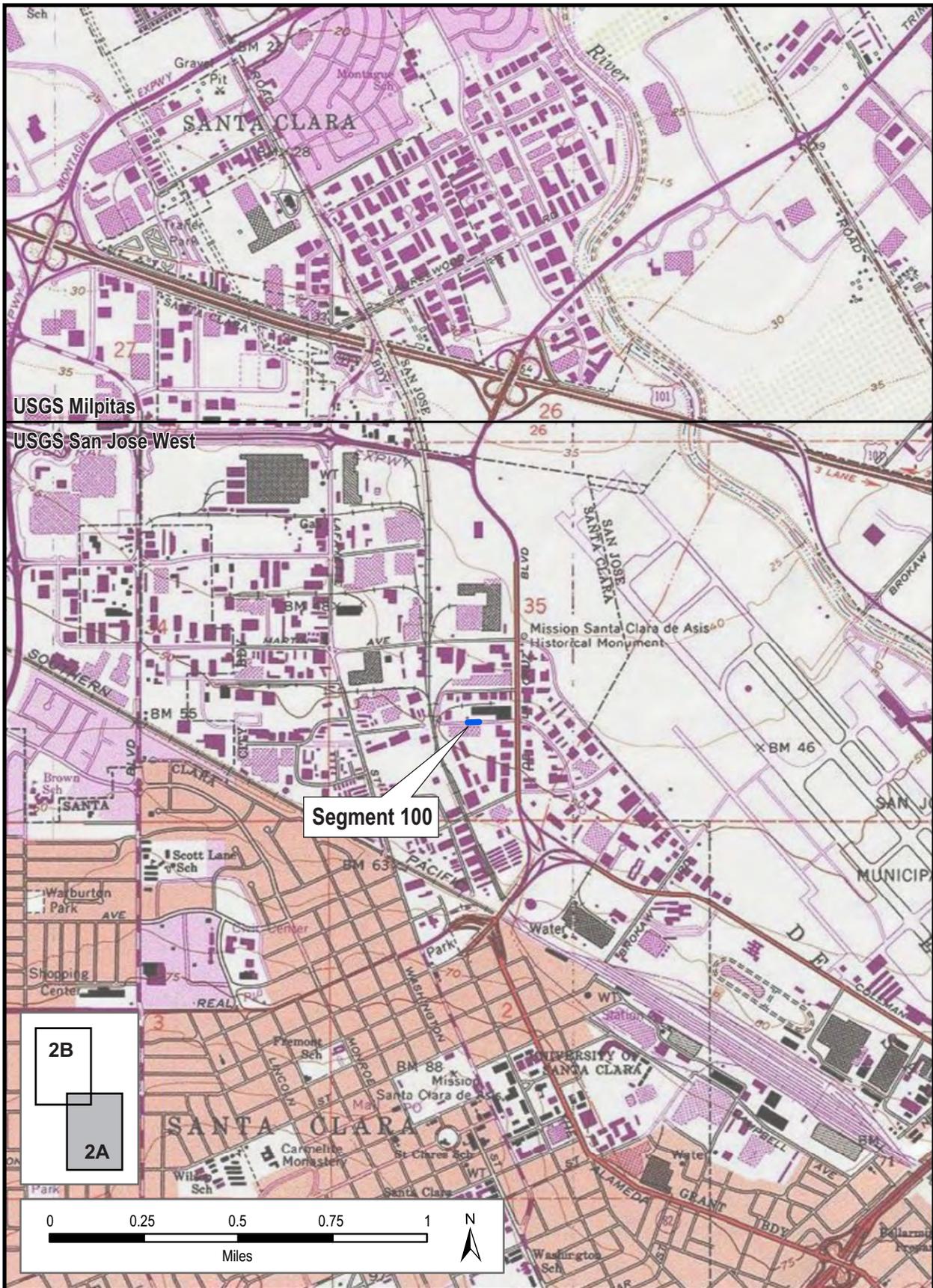


Figure 2A: Project Location - Segment 100 - T6S R1W, Sec 35 (USGS Milpitas, Calif. 1980 and San Jose West, Calif. 1980)

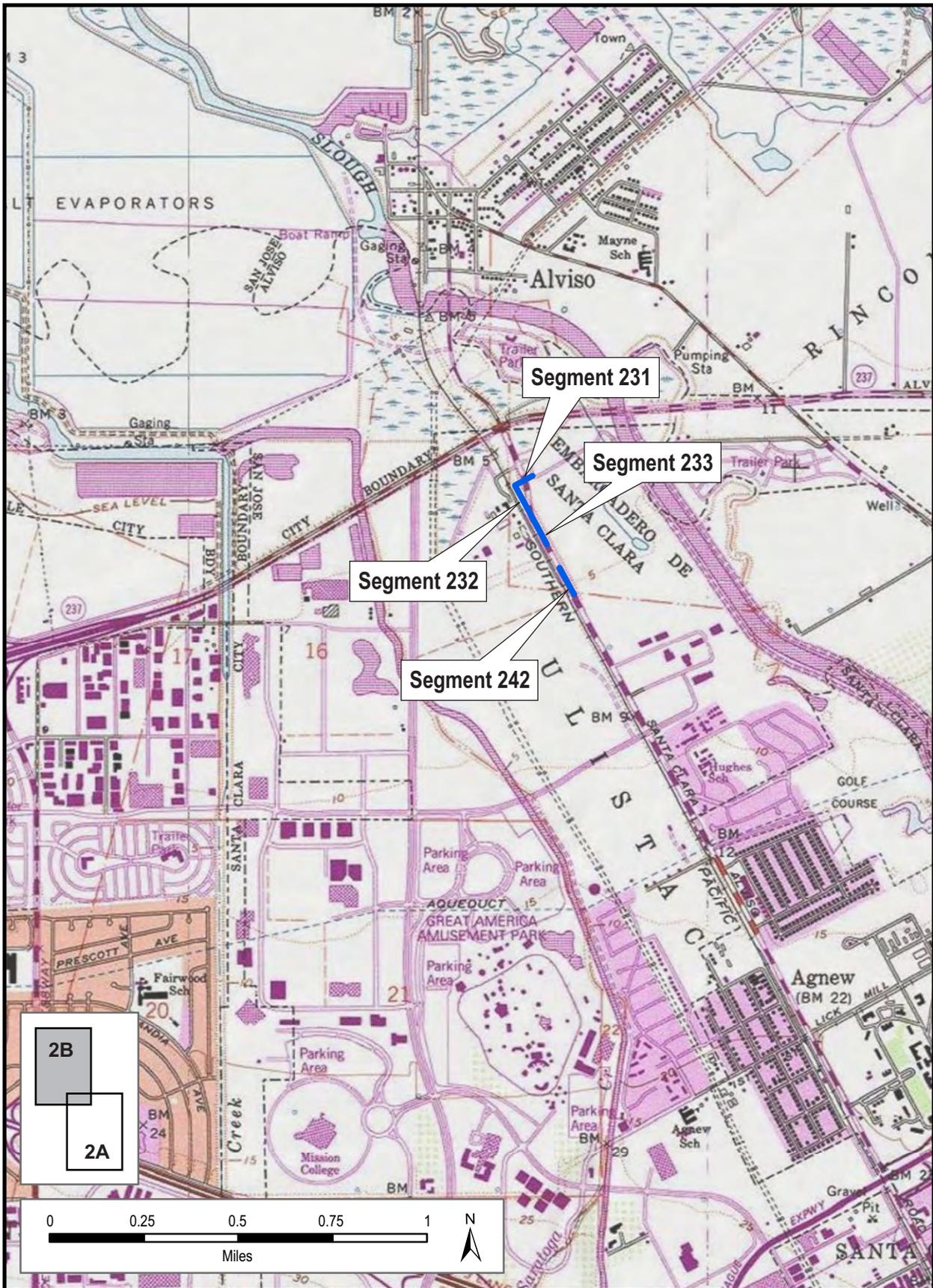


Figure 2B: Project Locations - Segments 231, 232, 233, & 242 - T6S R1W unsectioned (USGS Milpitas, Calif. 1980)

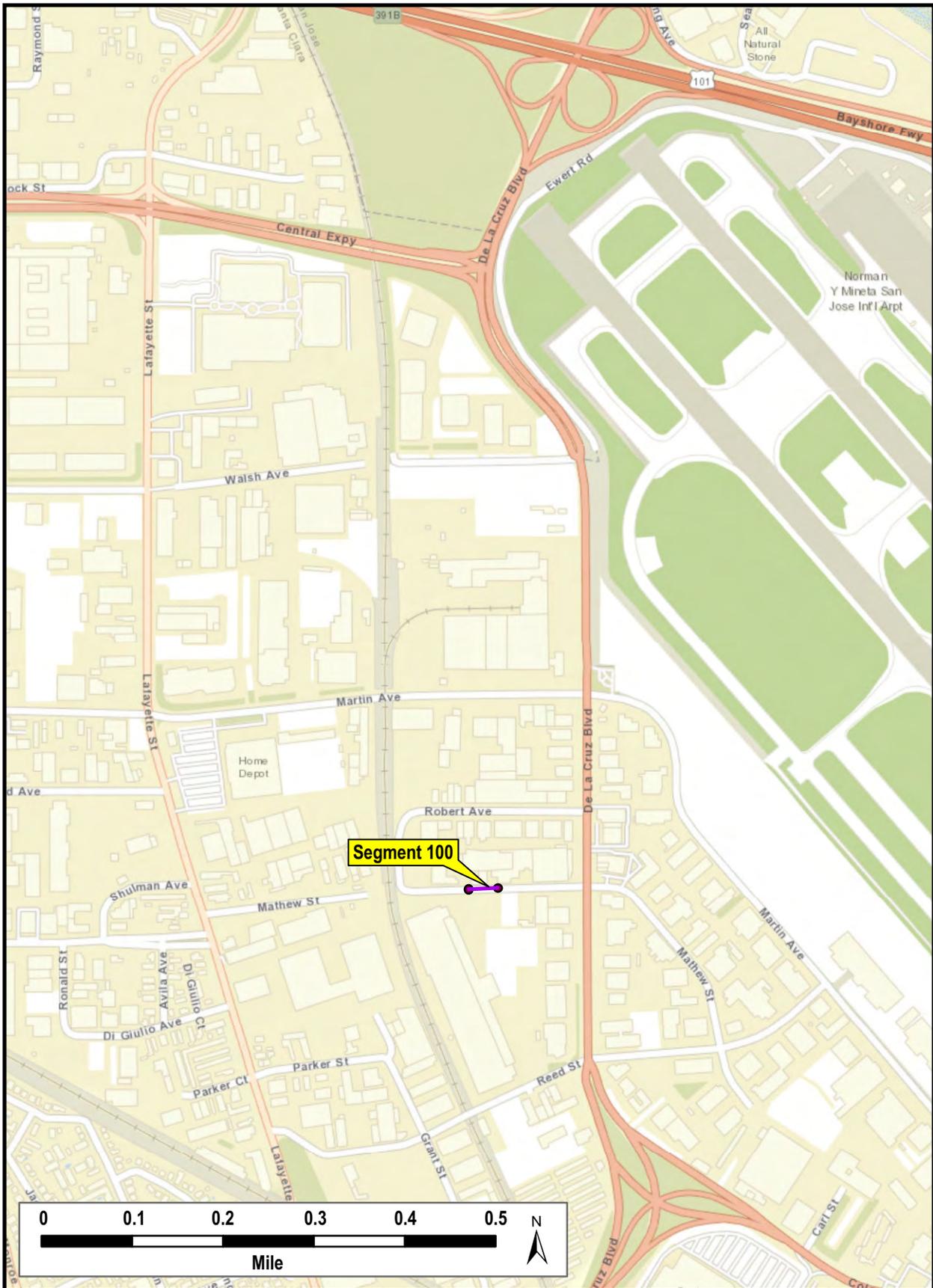


Figure 3A: Repair Location - Segment 100 (ESRI World Street Map)

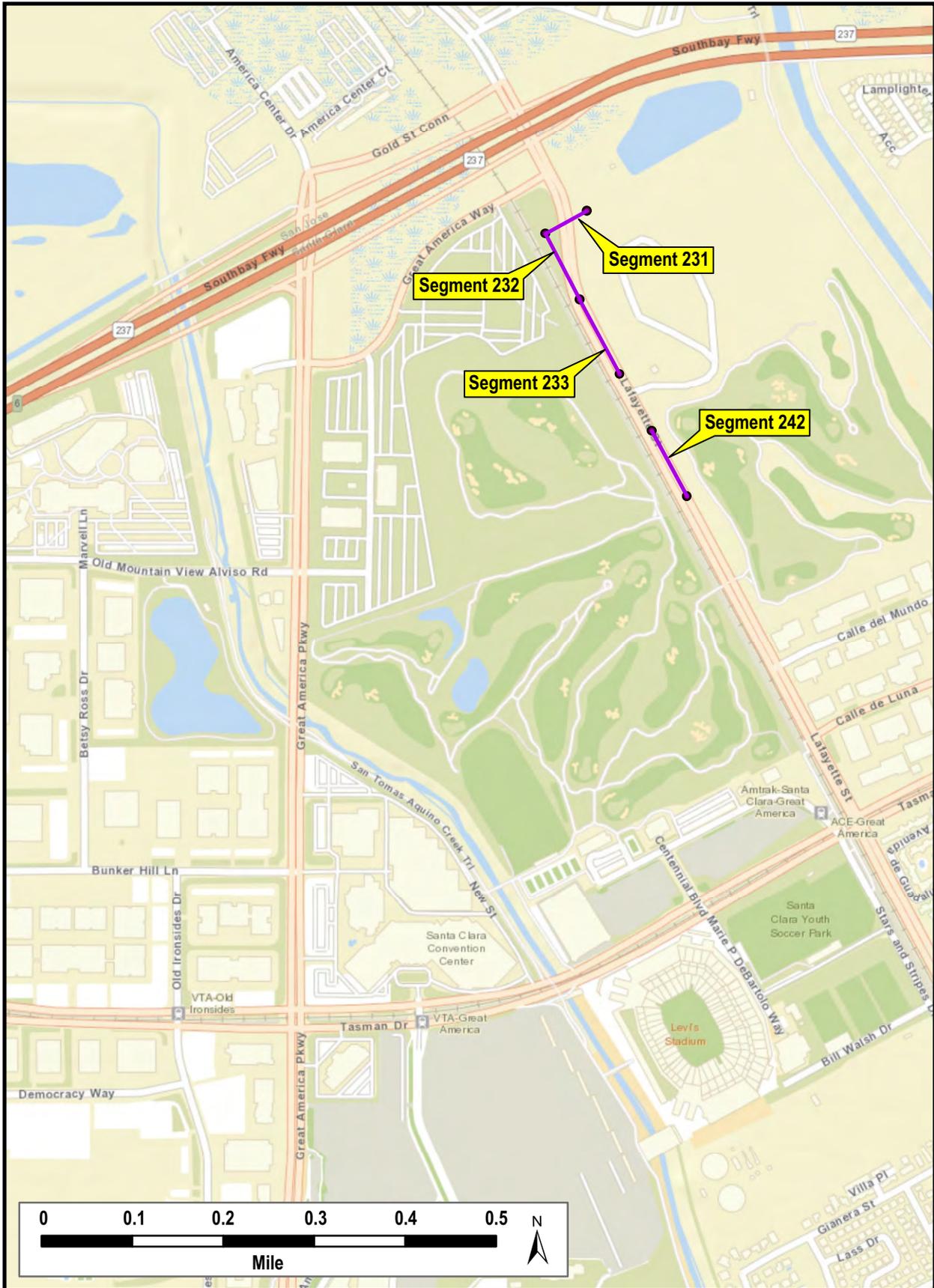


Figure 3B: Repair Locations - Segments 231, 232, 233 & 242 (ESRI World Street Map)

Aerial Photograph Source: GoogleEarth (imagery date: 09/04/2020, downloaded: 03/07/2022)  
For illustration only, locations not surveyed

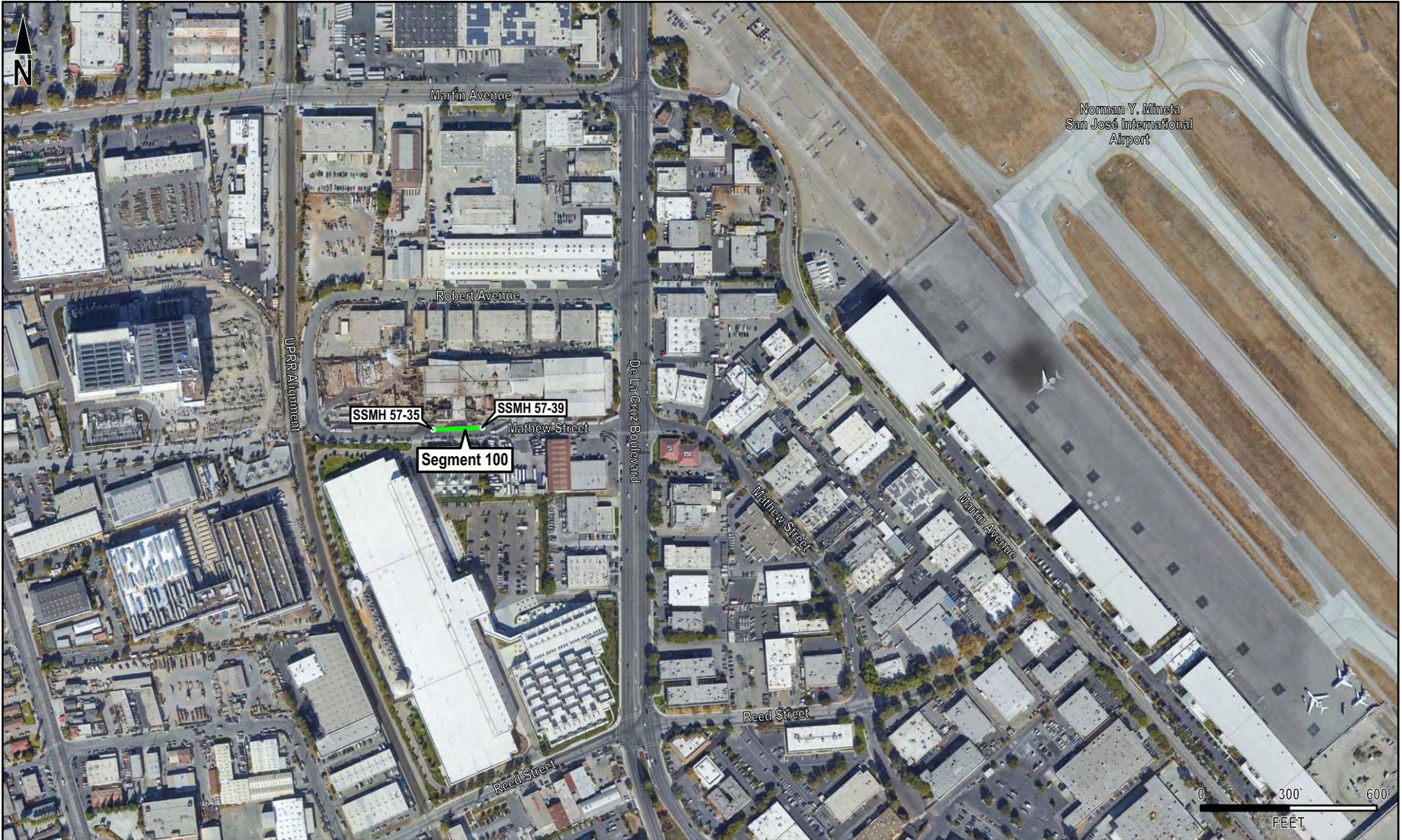


Figure 4A: Location of Segment 100

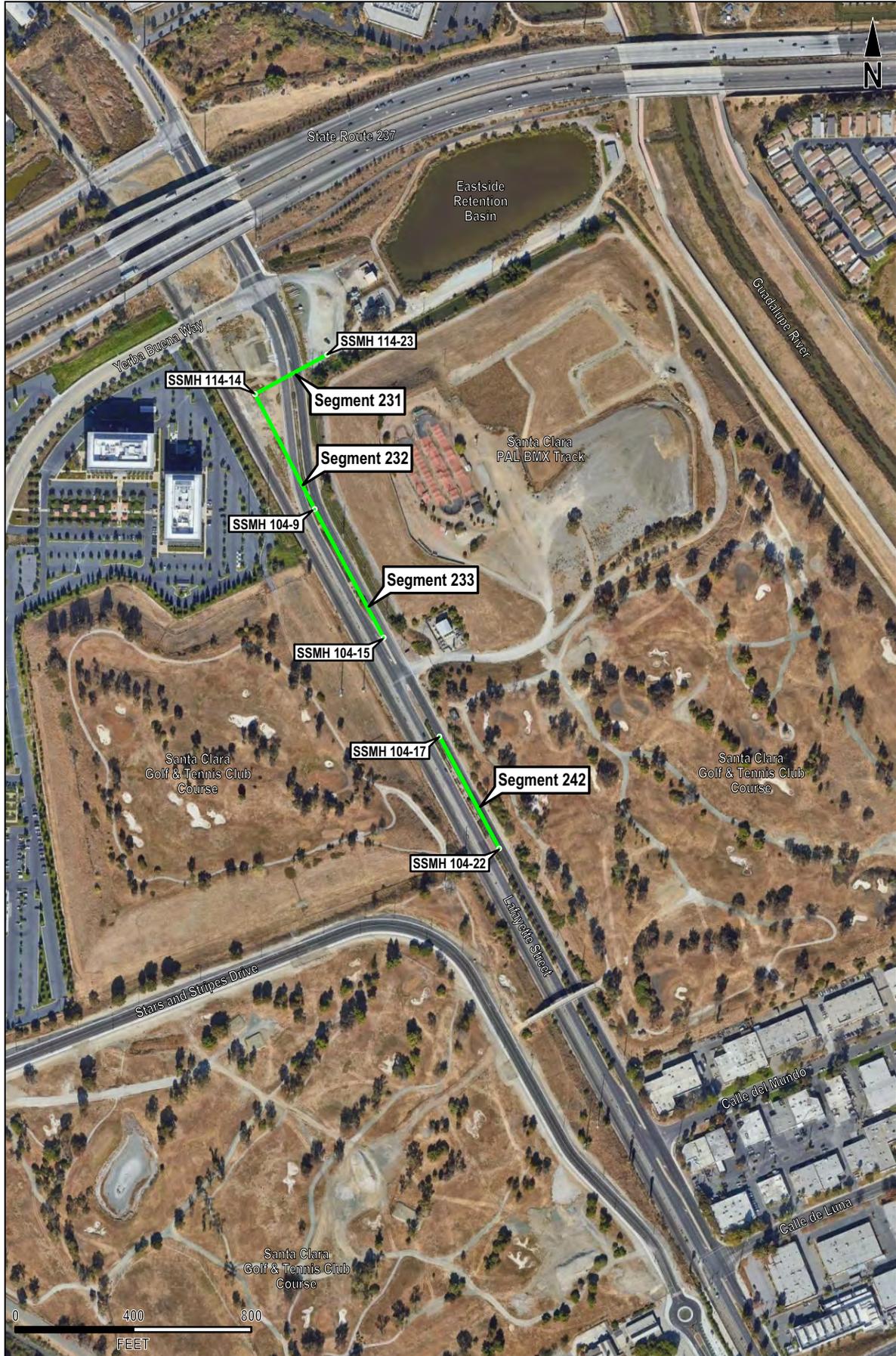


Figure 4B: Location of Segments 231, 232, 233 and 242

Note: Repairs analyzed in this Initial Study are highlighted in green.

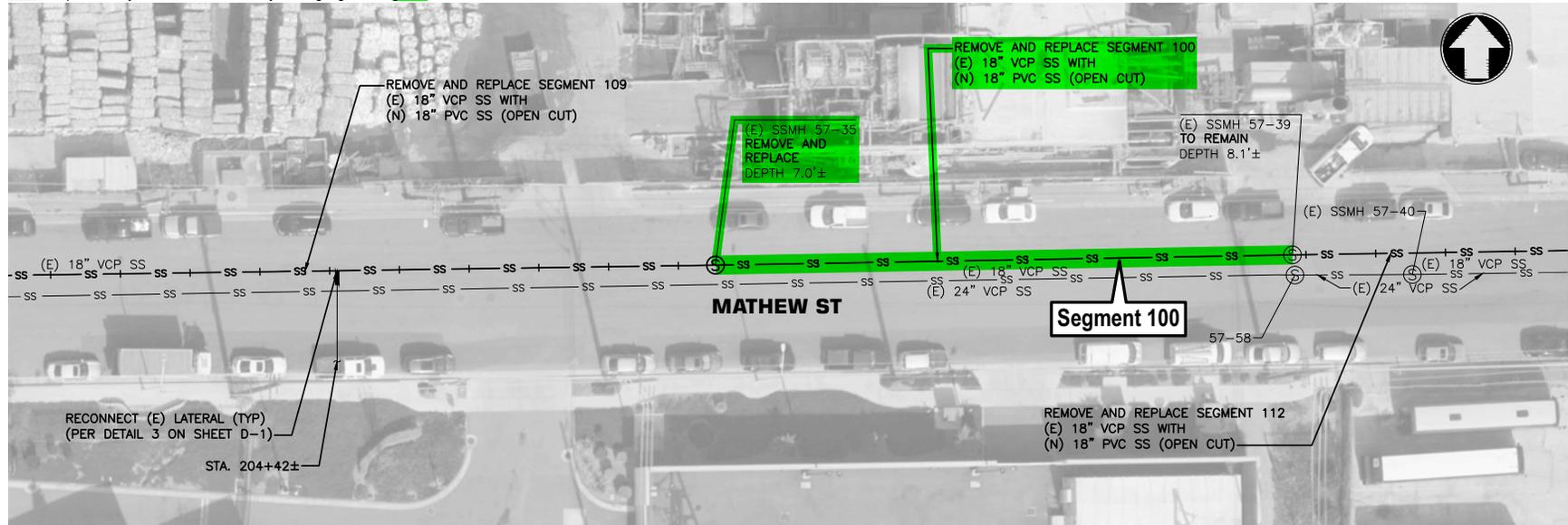


Figure 5A: Proposed Repairs at Segment 100

**Note:** Repairs analyzed in this Initial Study are highlighted in green.

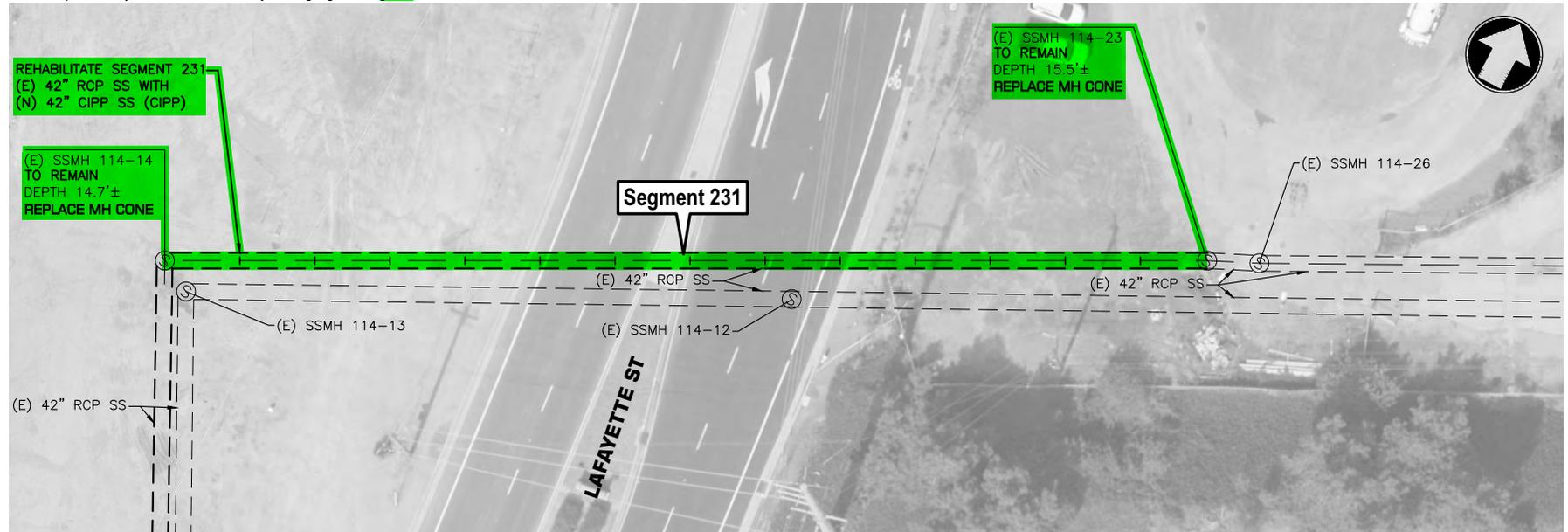


Figure 5B: Proposed Repairs at Segment 231

Note: Repairs analyzed in this Initial Study are highlighted in green.

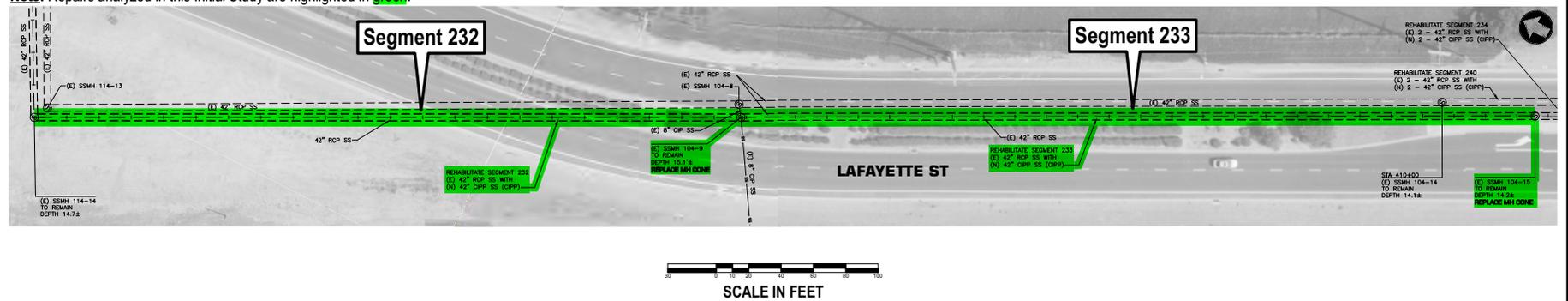


Figure 5C: Proposed Repairs at Segments 232 & 233

Note: Repairs analyzed in this Initial Study are highlighted in green.

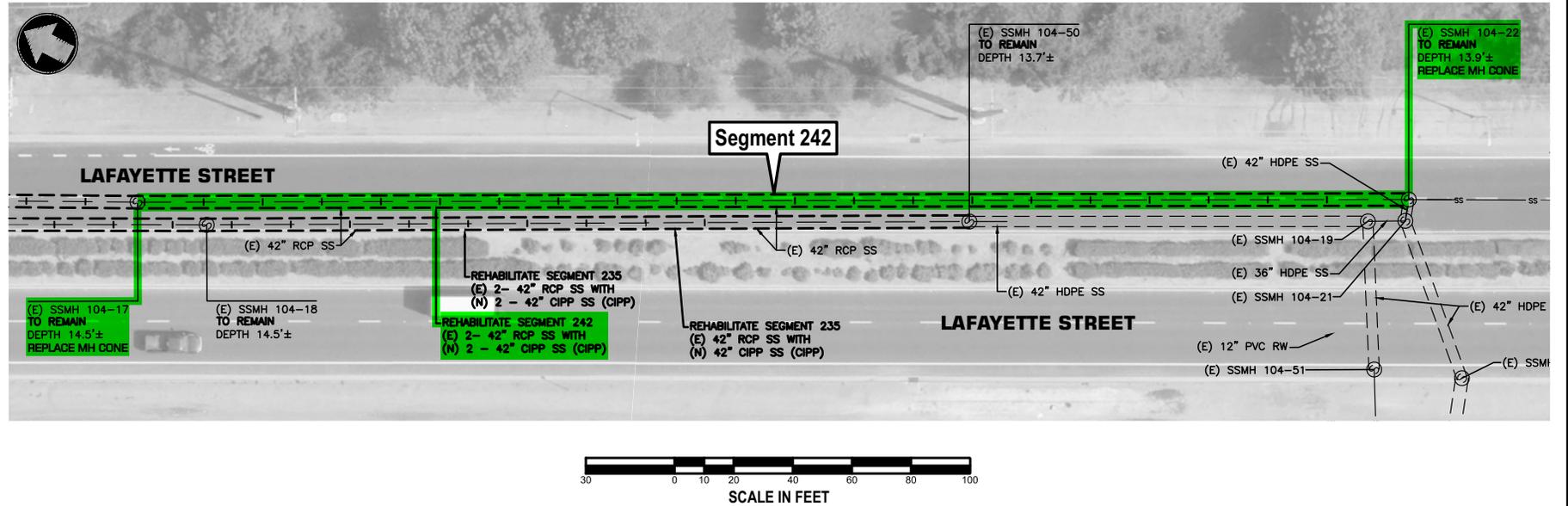


Figure 5D: Proposed Repairs at Segment 242

**Sacred Lands File & Native American Contacts List Request**  
**NATIVE AMERICAN HERITAGE COMMISSION**

1556 Harbor Boulevard, STE 100

West Sacramento, CA 95691

(916) 373-3710

(916) 373-5471 – Fax

nahc@nahc.ca.gov

*Information Below is Required for a Sacred Lands File Search*

**Project:** Santa Clara Sanitary Sewer Repairs – 5 locations

**County:** Santa Clara County

**USGS Quadrangle Name:** USGS Davenport, CA 1997

**Address:** Various – within public right-of-way along Lafayette Street and Matthew Street, City of Santa Clara

**Township:** 6 South **Range:** 1 W, Section 35 and unsectioned

**Company/Firm/Agency:** Basin Research Associates

**Contact Person:** Colin I. Busby, PhD, RPA

**Street Address:** 1933 Davis Street, STE 210

**City/Zip:** San Leandro, CA 94577

**Phone:** (510) 430-8441 x101

**Email:** Please send response to [basinres1@gmail.com](mailto:basinres1@gmail.com)

**Project Description:**

**Project Description:** Repairs to existing sanitary sewers. Specific project objectives include the following:

- Segment 100 (Mathew Street): remove 166 linear feet (lf) of existing 18-inch-diameter vitrified clay pipe (VCP) sewer line and replace it with 18-inch-diameter polyvinyl chloride (PVC) sewer line; remove and replace sanitary sewer manhole (SSMH) 57-35 at west terminus of Segment
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NOTE: lf = linear feet; SSMH = Sanitary Sewer Man Hole

**Date:** 03/28/2022

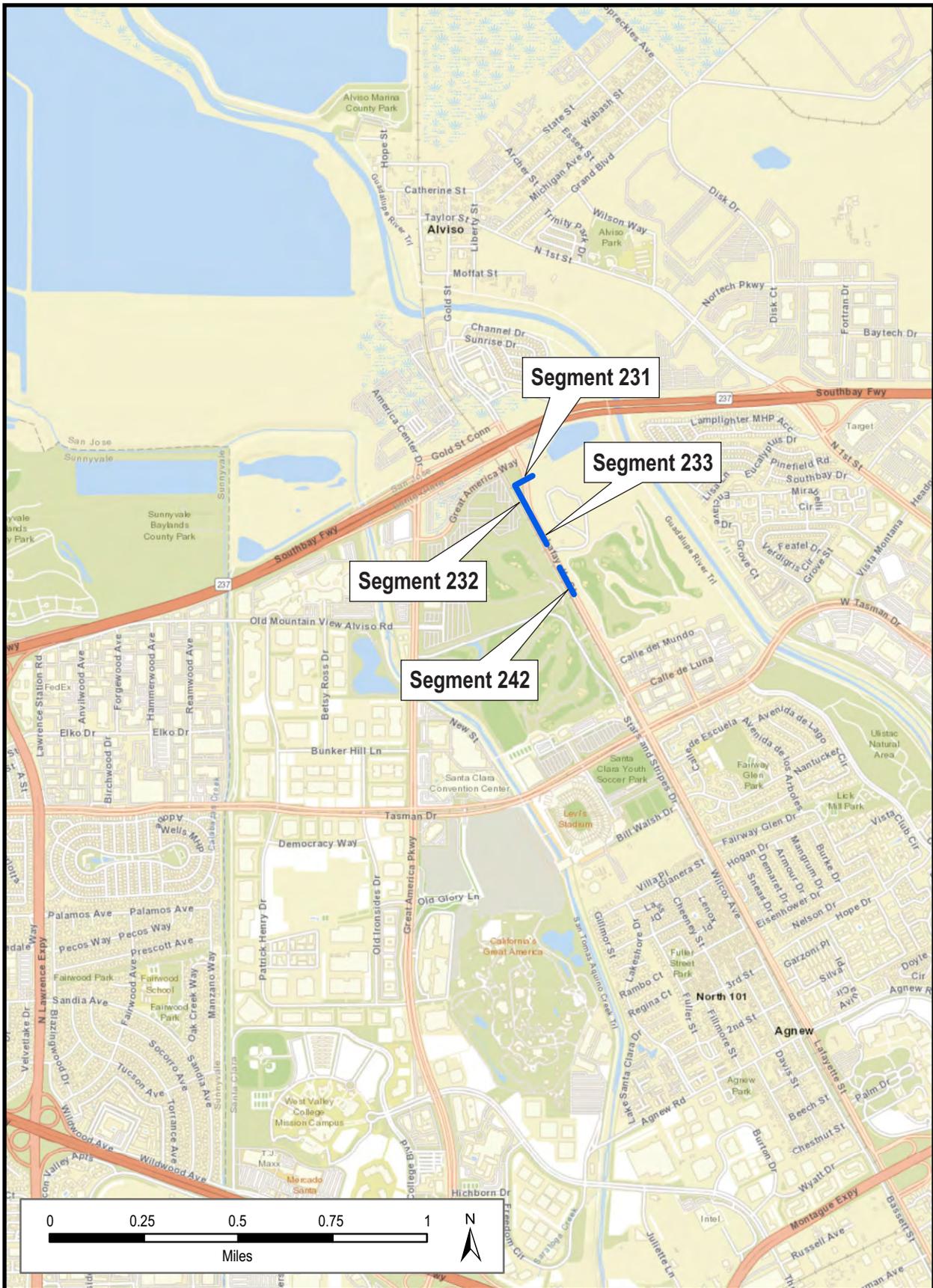


Figure 1A: Project Locations - T6S R1W unsectioned (ESRI World Street Map)



Figure 1B: Project Location - T6S R1W, Sec 35 (ESRI World Street Map)

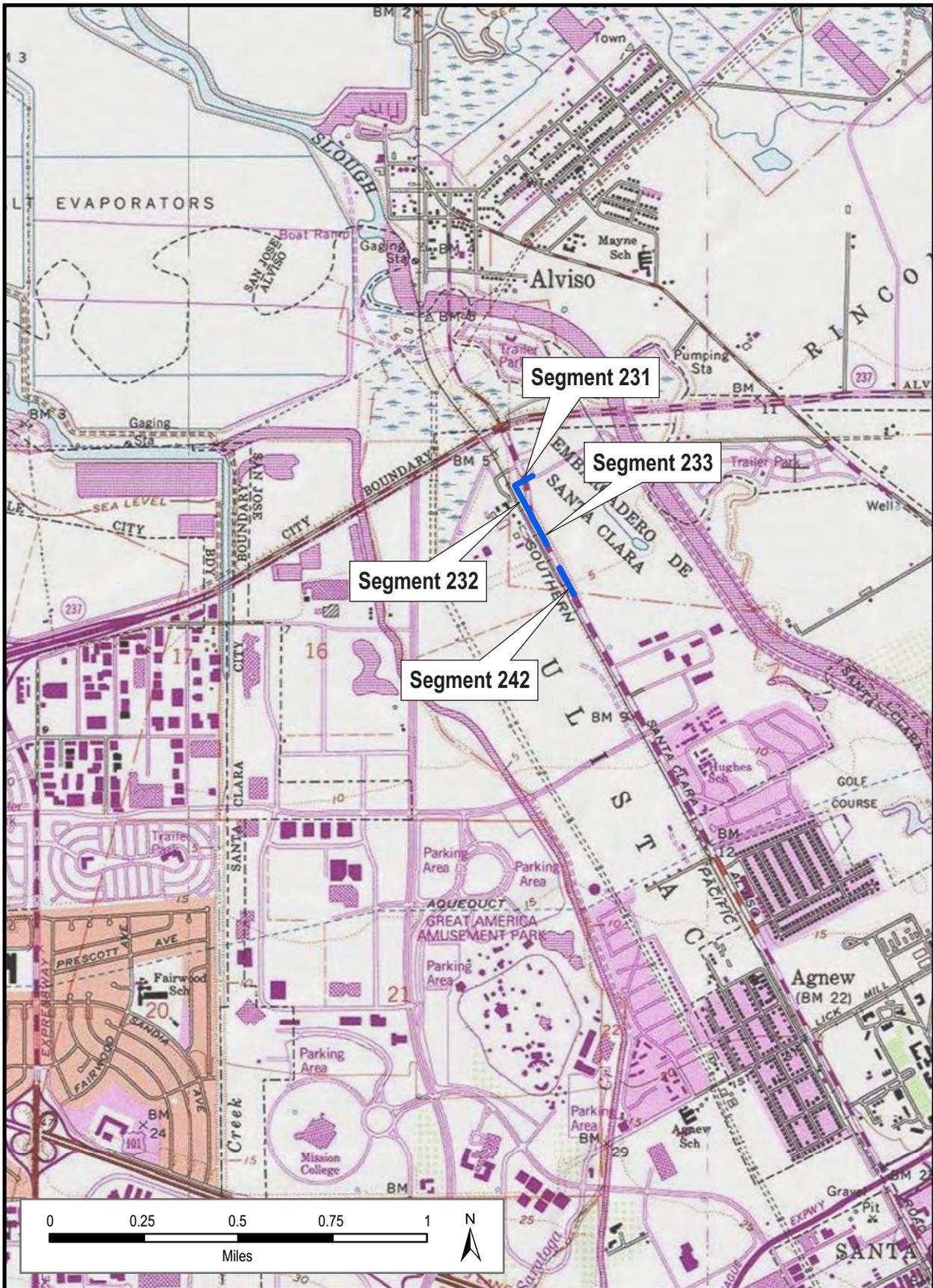


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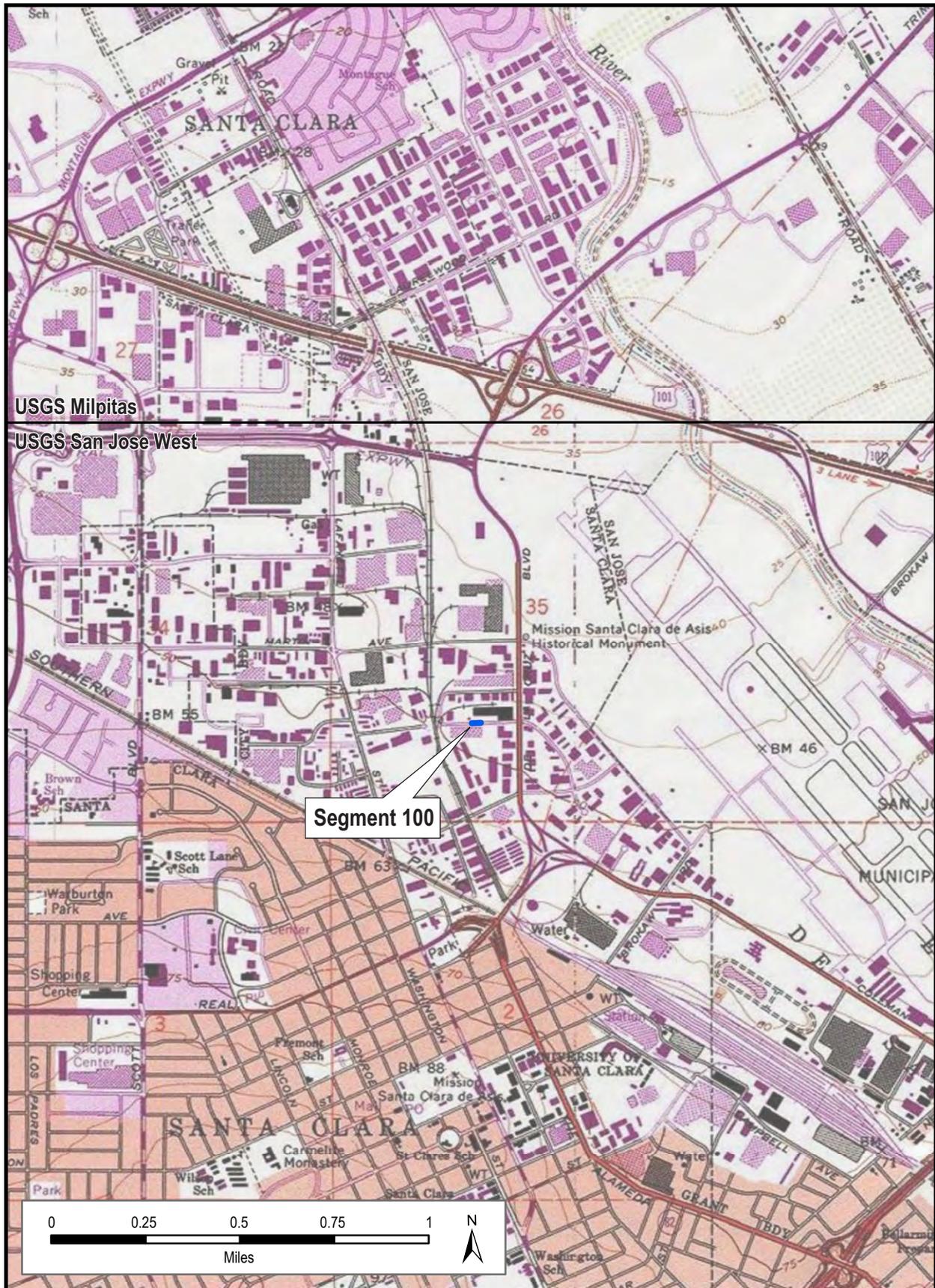


Figure 1B: Project Location - T6S R1W, Sec 35 (USGS Milpitas, Calif. 1980 and San Jose West, Calif. 1980)

## NATIVE AMERICAN HERITAGE COMMISSION

April 24, 2022

Colin I. Busby, PhD, RPA  
Basin Research Associates

Via Email to: [basinres1@gmail.com](mailto:basinres1@gmail.com)

### Re: Santa Clara Sanitary Sewer Repairs – 5 locations Project, Santa Clara County

Dear Dr. Busby:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the North Valley Yokuts Tribe on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: [Cody.Campagne@nahc.ca.gov](mailto:Cody.Campagne@nahc.ca.gov).

Sincerely,

*Cody Campagne*

Cody Campagne  
Cultural Resources Analyst

Attachment



CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

SECRETARY  
**Sara Dutschke**  
Miwok

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Isaac Bojorquez**  
Ohlone-Costanoan

COMMISSIONER  
**Buffy McQuillen**  
Yokayo Pomo, Yuki,  
Nomlaki

COMMISSIONER  
**Wayne Nelson**  
Luiseño

COMMISSIONER  
**Stanley Rodriguez**  
Kumeyaay

EXECUTIVE SECRETARY  
**Raymond C. Hitchcock**  
Miwok/Nisenan

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
NAHC.ca.gov

**Native American Heritage Commission  
Native American Contact List  
Santa Clara County  
4/24/2022**

**Amah Mutsun Tribal Band**

Valentin Lopez, Chairperson  
P.O. Box 5272  
Galt, CA, 95632  
Phone: (916) 743 - 5833  
vlopez@amahmutsun.org

Costanoan  
Northern Valley  
Yokut

**North Valley Yokuts Tribe**

Timothy Perez,  
P.O. Box 717  
Linden, CA, 95236  
Phone: (209) 662 - 2788  
huskanam@gmail.com

Costanoan  
Northern Valley  
Yokut

**Amah Mutsun Tribal Band of  
Mission San Juan Bautista**

Irene Zwierlein, Chairperson  
3030 Soda Bay Road  
Lakeport, CA, 95453  
Phone: (650) 851 - 7489  
Fax: (650) 332-1526  
amahmutsuntribal@gmail.com

Costanoan

**The Ohlone Indian Tribe**

Andrew Galvan,  
P.O. Box 3388  
Fremont, CA, 94539  
Phone: (510) 882 - 0527  
Fax: (510) 687-9393  
chochenyo@AOL.com

Bay Miwok  
Ohlone  
Patwin  
Plains Miwok

**Indian Canyon Mutsun Band of  
Costanoan**

Kanyon Sayers-Roods, MLD  
Contact  
1615 Pearson Court  
San Jose, CA, 95122  
Phone: (408) 673 - 0626  
kanyon@kanyonconsulting.com

Costanoan

**Wuksache Indian Tribe/Eshom  
Valley Band**

Kenneth Woodrow, Chairperson  
1179 Rock Haven Ct.  
Salinas, CA, 93906  
Phone: (831) 443 - 9702  
kwood8934@aol.com

Foothill Yokut  
Mono

**Tamien Nation**

Johnathan Wasaka Costillas,  
THPO  
PO Box 866  
Clearlake Oaks, CA, 94523  
Phone: (925) 336 - 5359  
thpo@tamien.org

Costanoan

**Indian Canyon Mutsun Band of  
Costanoan**

Ann Marie Sayers, Chairperson  
P.O. Box 28  
Hollister, CA, 95024  
Phone: (831) 637 - 4238  
ams@indiancanyons.org

Costanoan

**Tamien Nation**

Quirina Luna Geary, Chairperson  
PO Box 8053  
San Jose, CA, 95155  
Phone: (707) 295 - 4011  
qgeary@tamien.org

Costanoan

**Muwekma Ohlone Indian Tribe  
of the SF Bay Area**

Monica Arellano, Vice  
Chairwoman  
20885 Redwood Road, Suite 232  
Castro Valley, CA, 94546  
Phone: (408) 205 - 9714  
marellano@muvekma.org

Costanoan

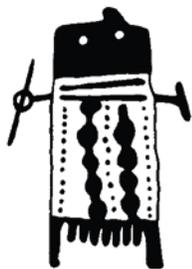
**North Valley Yokuts Tribe**

Katherine Perez, Chairperson  
P.O. Box 717  
Linden, CA, 95236  
Phone: (209) 887 - 3415  
canutes@verizon.net

Costanoan  
Northern Valley  
Yokut

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Santa Clara Sanitary Sewer Repairs – 5 locations Project, Santa Clara County.



April 28, 2022

**BASIN**  
RESEARCH  
ASSOCIATES

1933 DAVIS STREET  
SUITE 214  
SAN LEANDRO, CA 94577  
VOICE (510) 430-8441  
FAX (510) 430-8443

***Amah Mutsun Tribal Band***

Valentin Lopez, Chairperson  
P.O. Box 5273  
Galt, CA 95632

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations, City of Santa Clara

Dear Valentin,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe (Katherine Perez, Chairperson). No recorded archaeological resources are known for the 5 proposed repair locations.

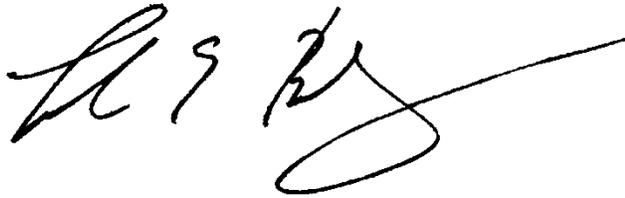
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NOTE: lf = linear feet; SSMH = Sanitary Sewer Man Hole

We look forward to hearing from you. I can be reached at (510) 430-8441 x101 or via email at [basinres1@gmail.com](mailto:basinres1@gmail.com). Thanking you in advance for any assistance.

BASIN RESEARCH ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'C. I. Busby', with a long horizontal flourish extending to the right.

Colin I. Busby, Ph.D., RPA

Maps Attached

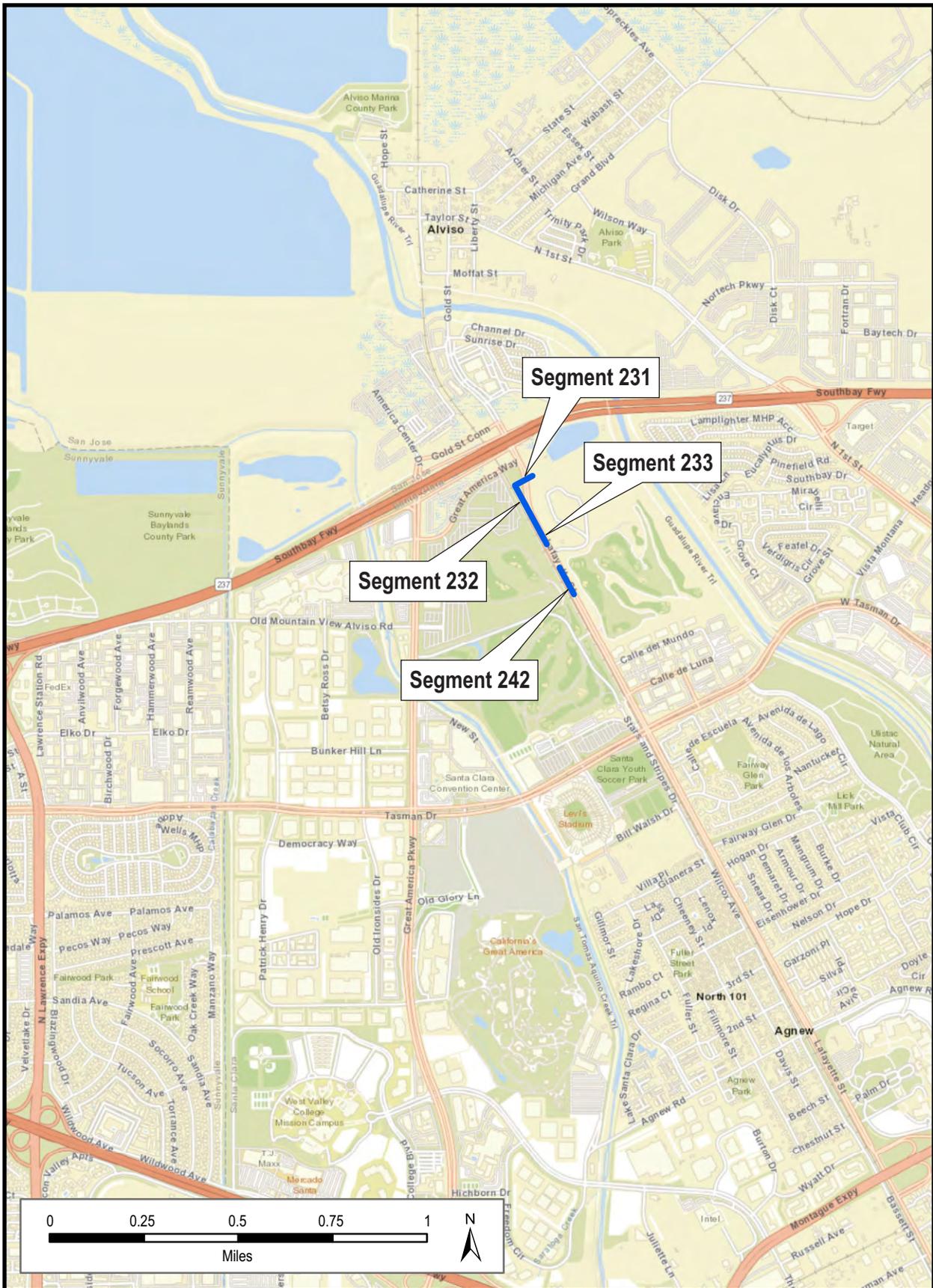


Figure 1A: Project Locations - T6S R1W unsectioned (ESRI World Street Map)



Figure 1B: Project Location - T6S R1W, Sec 35 (ESRI World Street Map)

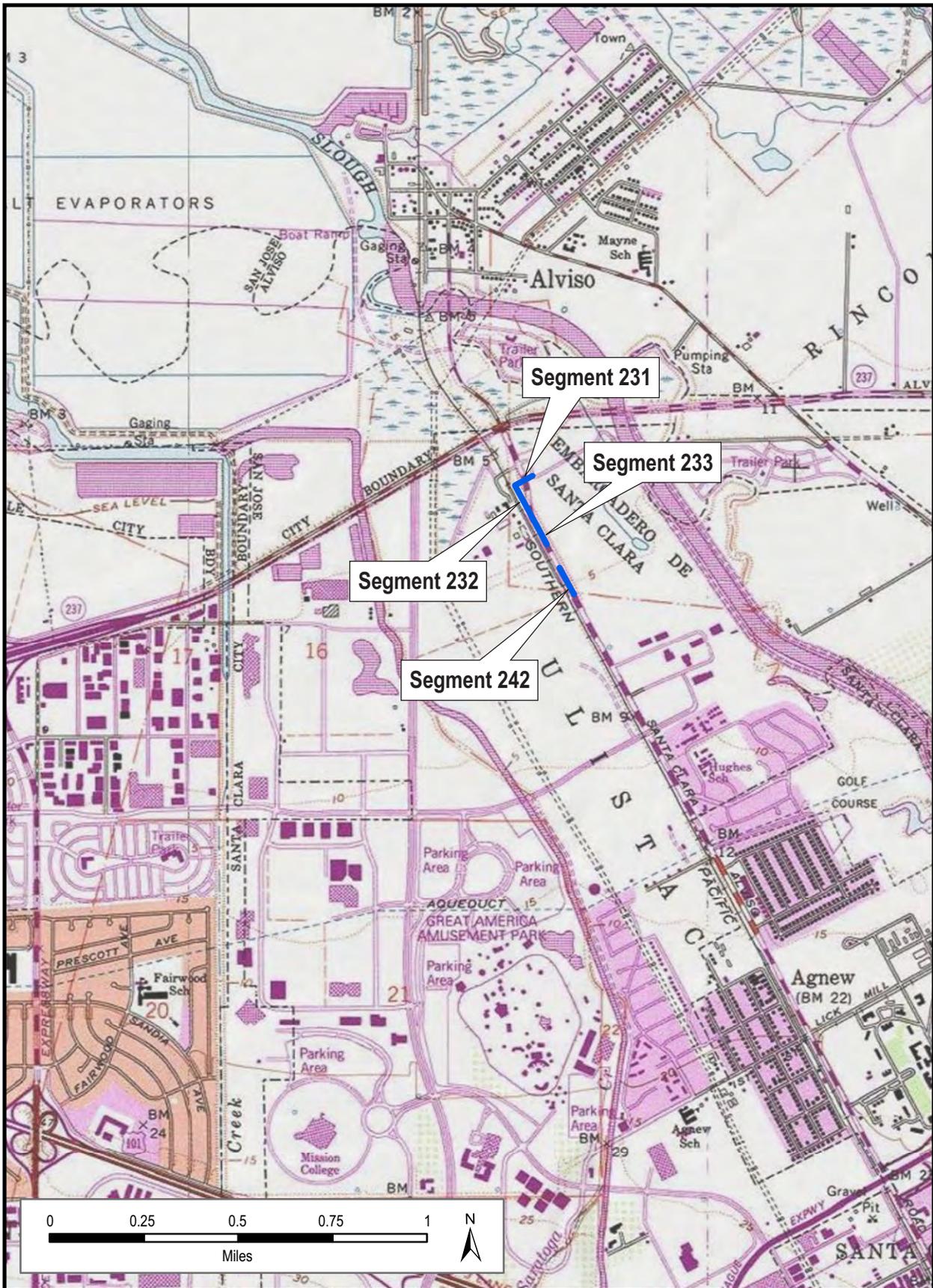


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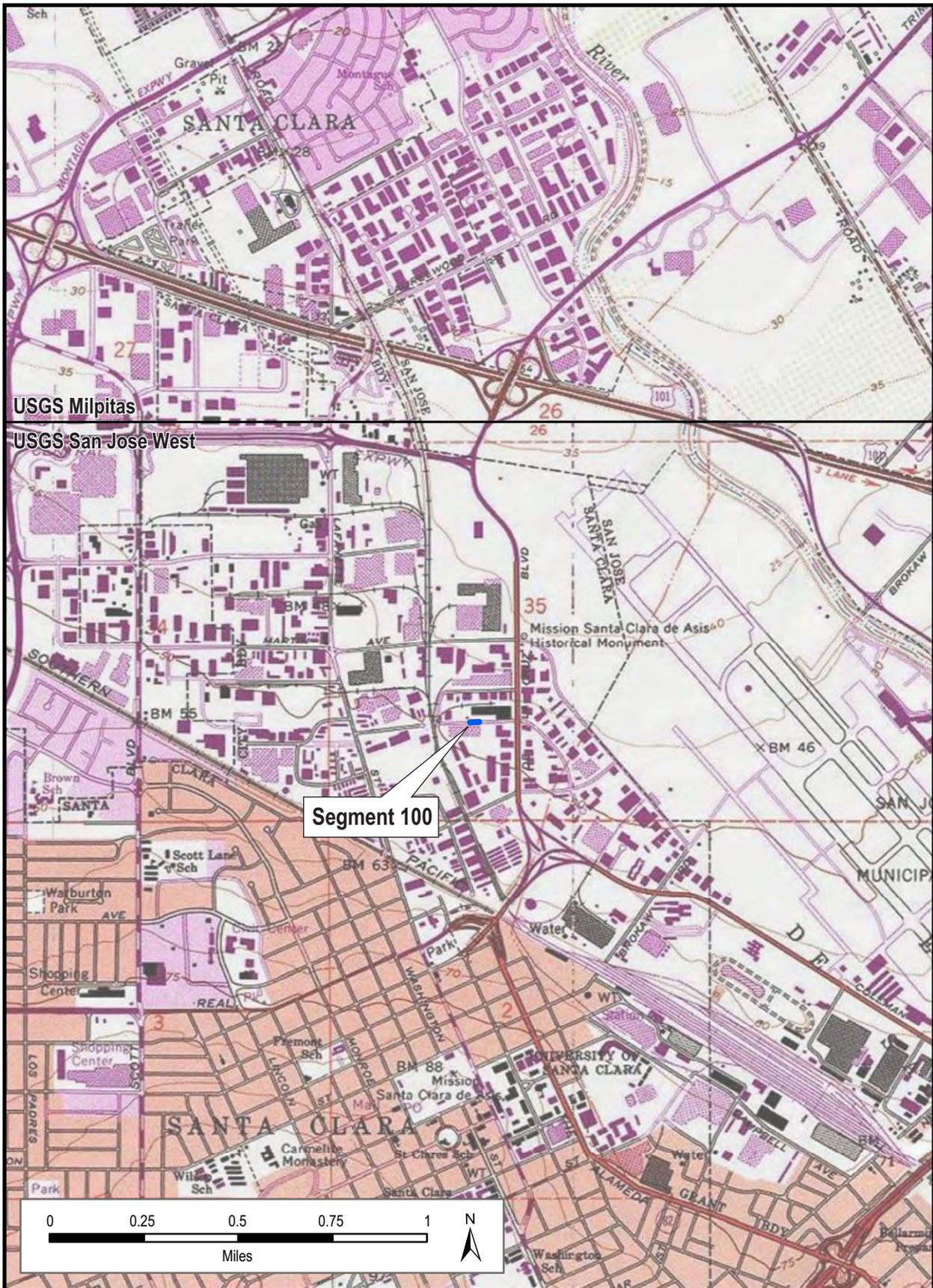


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April 28, 2022

**BASIN**  
RESEARCH  
ASSOCIATES

1933 DAVIS STREET  
SUITE 214  
SAN LEANDRO, CA 94577  
VOICE (510) 430-8441  
FAX (510) 430-8443

***Amah Mutsun Tribal Band of Mission San Juan Bautista***

Irene Zwierlein, Chairperson  
3030 Soda Bay Road  
Lakeport, CA 95453

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations, City of Santa Clara

Dear Irene,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe (Katherine Perez, Chairperson). No recorded archaeological resources are known for the 5 proposed repair locations.

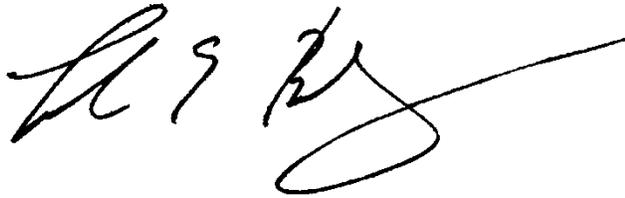
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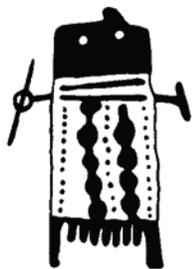
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BASIN RESEARCH ASSOCIATES, INC.

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Colin I. Busby, Ph.D., RPA

Maps Attached



April 28, 2022

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RESEARCH  
ASSOCIATES

1933 DAVIS STREET  
SUITE 214  
SAN LEANDRO, CA 94577  
VOICE (510) 430-8441  
FAX (510) 430-8443

***Indian Canyon Mutsun Band of Costanoan***

Ann Marie Sayers, Chairperson  
P.O. Box 28  
Hollister, CA 95024

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations, City of Santa Clara

Dear Ann Marie,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe (Katherine Perez, Chairperson). No recorded archaeological resources are known for the 5 proposed repair locations.

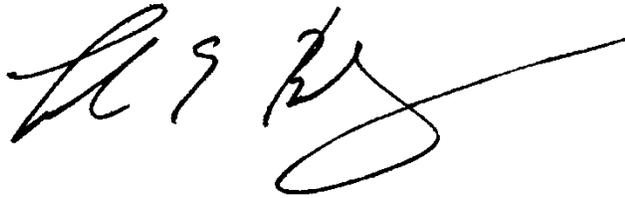
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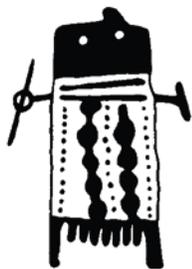
BASIN RESEARCH ASSOCIATES, INC.

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Colin I. Busby, Ph.D., RPA

Maps Attached

Cc: Kanyson Sayers-Roods, MLD



April 28, 2022

**BASIN**  
RESEARCH  
ASSOCIATES

1933 DAVIS STREET  
SUITE 214  
SAN LEANDRO, CA 94577  
VOICE (510) 430-8441  
FAX (510) 430-8443

***Muwekma Ohlone Indian Tribe of the San Francisco Bay Area***

Monica Arellano, Vice Chairperson  
20885 Redwood Road, STE 232  
Castro Valley, CA 94546

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations,  
City of Santa Clara

Dear Monica,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe (Katherine Perez, Chairperson). No recorded archaeological resources are known for the 5 proposed repair locations.

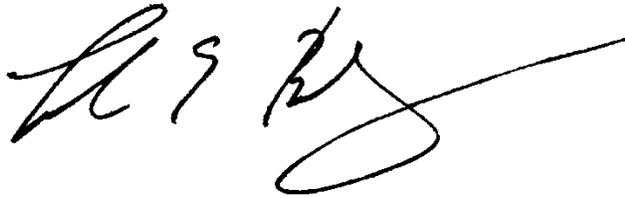
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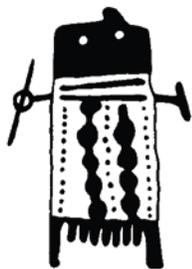
We look forward to hearing from you. I can be reached at (510) 430-8441 x101 or via email at [basinres1@gmail.com](mailto:basinres1@gmail.com). Thanking you in advance for any assistance.

BASIN RESEARCH ASSOCIATES, INC.

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Colin I. Busby, Ph.D., RPA

Maps Attached



April 28, 2022

**BASIN**  
RESEARCH  
ASSOCIATES

1933 DAVIS STREET  
SUITE 214  
SAN LEANDRO, CA 94577  
VOICE (510) 430-8441  
FAX (510) 430-8443

***North Valley Yokuts Tribe***

Katherine Perez, Chairperson

P.O. Box 717.

Linden, CA 95236

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations, City of Santa Clara

Dear Kathy,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe. No recorded archaeological resources are known for the 5 proposed repair locations.

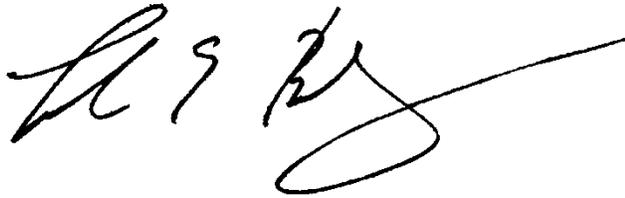
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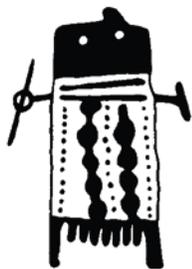
BASIN RESEARCH ASSOCIATES, INC.

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Colin I. Busby, Ph.D., RPA

Maps Attached

Cc: Timothy Perez



April 28, 2022

**BASIN**  
RESEARCH  
ASSOCIATES

1933 DAVIS STREET  
SUITE 214  
SAN LEANDRO, CA 94577  
VOICE (510) 430-8441  
FAX (510) 430-8443

***The Ohlone Tribe***

Andrew Galvan  
P.O. Box 3388  
Fremont, CA 94539

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations,  
City of Santa Clara

Dear Andy,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe (Katherine Perez, Chairperson). No recorded archaeological resources are known for the 5 proposed repair locations.

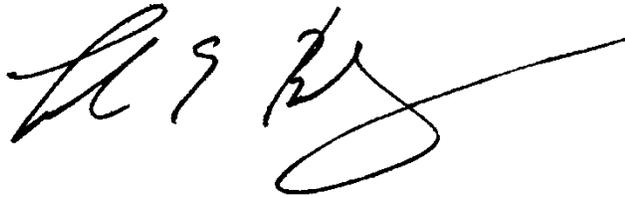
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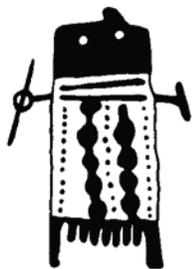
We look forward to hearing from you. I can be reached at (510) 430-8441 x101 or via email at [basinres1@gmail.com](mailto:basinres1@gmail.com). Thanking you in advance for any assistance.

BASIN RESEARCH ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read 'C. I. Busby', with a long horizontal flourish extending to the right.

Colin I. Busby, Ph.D., RPA

Maps Attached



April 28, 2022

**BASIN**  
RESEARCH  
ASSOCIATES

1933 DAVIS STREET  
SUITE 214  
SAN LEANDRO, CA 94577  
VOICE (510) 430-8441  
FAX (510) 430-8443

***Wuksache Indian Tribe/Eshom Valley Band***

Kenneth Woodrow, Chairperson  
1179 Rock Haven Ct.  
Salinas, CA 93906

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations, City of Santa Clara

Dear Chairperson Woodrow,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe (Kathy Perez, Chairperson). No recorded archaeological resources are known for the 5 proposed repair locations.

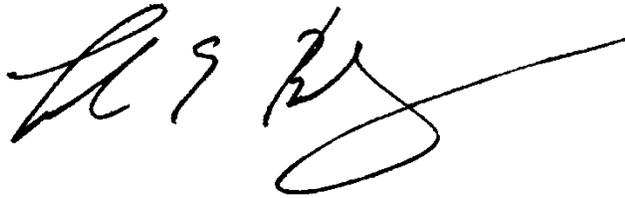
The project plans to repair existing sanitary sewers within the public right of way. New excavation is not anticipated. The following provide a description of each repair mapped on the attached maps.

- Segment 100 (Mathew Street): remove 166 linear feet (lf) of existing 18-inch-diameter vitrified clay pipe (VCP) sewer line and replace it with 18-inch-diameter polyvinyl chloride (PVC) sewer line; remove and replace sanitary sewer manhole (SSMH) 57-35 at west terminus of Segment
- Segment 231 (Lafayette Street): install 278 lf of cured-in-place-pipe (CIPP) lining in existing 42-inch-diameter reinforced concrete pipe (RCP) sewer line; replace cones of SSMH 114-14 and SSMH 114-23 at termini of Segment
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NOTE: lf = linear feet; SSMH = Sanitary Sewer Man Hole

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Colin I. Busby, Ph.D., RPA

Maps Attached



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VOICE (510) 430-8441  
FAX (510) 430-8443

***Tamien Nation***

Quirina Lune Geary, Chairperson  
P.O. Box 8053  
San Jose, CA 95155

RE: Request for Information – Santa Clara Sanitary Sewer Repairs, 5 Locations,  
City of Santa Clara

Dear Chairperson Geary,

The Native American Heritage Commission has provided your name as a person who may have further information on Native American resources associated with the above project. The NAHC has indicated positive findings for a tribal cultural resource on the Sacred Lands File known to the North Valley Yokuts Tribe (Katherine Perez, Chairperson). No recorded archaeological resources are known for the 5 proposed repair locations.

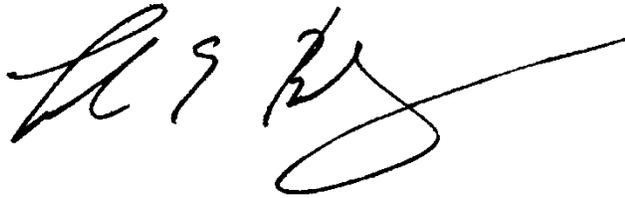
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BASIN RESEARCH ASSOCIATES, INC.

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Colin I. Busby, Ph.D., RPA

Maps Attached

Cc: Johnathan Wasaka Costillas, THPO



8/26/2021

NWIC File No.: 21-0235

Donna M. Garaventa  
Basin Research Associates  
1933 Davis Street, Suite 215  
San Leandro, CA 94577

Re: SCL-Sewer 2021

The Northwest Information Center received your record search request for the project area referenced above, located on the Milpitas and San Jose West USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a 500-foot radius:

Resources within project area:	None
Resources within 500 ft radius:	P-43-001731
Reports within project area:	S-07995, S-10200, S-12032, S-12294, S-14230, S-15935, S-19072, S-19424, S-22819, S-25173, S-33061
Reports within 500 ft radius:	22 reports – see enclosed Report List and Report Detail printouts

- |   |  |   |  |
|---|--|---|--|
| <b><u>Resource Database Printout (list):</u></b>            | <input checked="" type="checkbox"/> enclosed | <input type="checkbox"/> not requested            | <input type="checkbox"/> nothing listed            |
| <b><u>Resource Database Printout (details):</u></b>         | <input checked="" type="checkbox"/> enclosed | <input type="checkbox"/> not requested            | <input type="checkbox"/> nothing listed            |
| <b><u>Resource Digital Database Records:</u></b>            | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Report Database Printout (list):</u></b>              | <input checked="" type="checkbox"/> enclosed | <input type="checkbox"/> not requested            | <input type="checkbox"/> nothing listed            |
| <b><u>Report Database Printout (details):</u></b>           | <input checked="" type="checkbox"/> enclosed | <input type="checkbox"/> not requested            | <input type="checkbox"/> nothing listed            |
| <b><u>Report Digital Database Records:</u></b>              | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Resource Record Copies:</u></b>                       | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Report Copies:</u></b>                                | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>OHP Built Environment Resources Directory:</u></b>    | <input type="checkbox"/> enclosed            | <input type="checkbox"/> not requested            | <input checked="" type="checkbox"/> nothing listed |
| <b><u>Archaeological Determinations of Eligibility:</u></b> | <input type="checkbox"/> enclosed            | <input type="checkbox"/> not requested            | <input checked="" type="checkbox"/> nothing listed |
| <b><u>CA Inventory of Historic Resources (1976):</u></b>    | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Caltrans Bridge Survey:</u></b>                       | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Ethnographic Information:</u></b>                     | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Historical Literature:</u></b>                        | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Historical Maps:</u></b>                              | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>Local Inventories:</u></b>                            | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |
| <b><u>GLO and/or Rancho Plat Maps:</u></b>                  | <input type="checkbox"/> enclosed            | <input checked="" type="checkbox"/> not requested | <input type="checkbox"/> nothing listed            |

**Shipwreck Inventory:**

enclosed  not requested  nothing listed

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jessika Akmenkalns, Ph.D.  
Researcher

## **Appendix D**

# Proposed Mitigated Negative Declaration

California Environmental Quality Act (CEQA)  
**Proposed Mitigated Negative Declaration**



**Project Title & Contact Information**

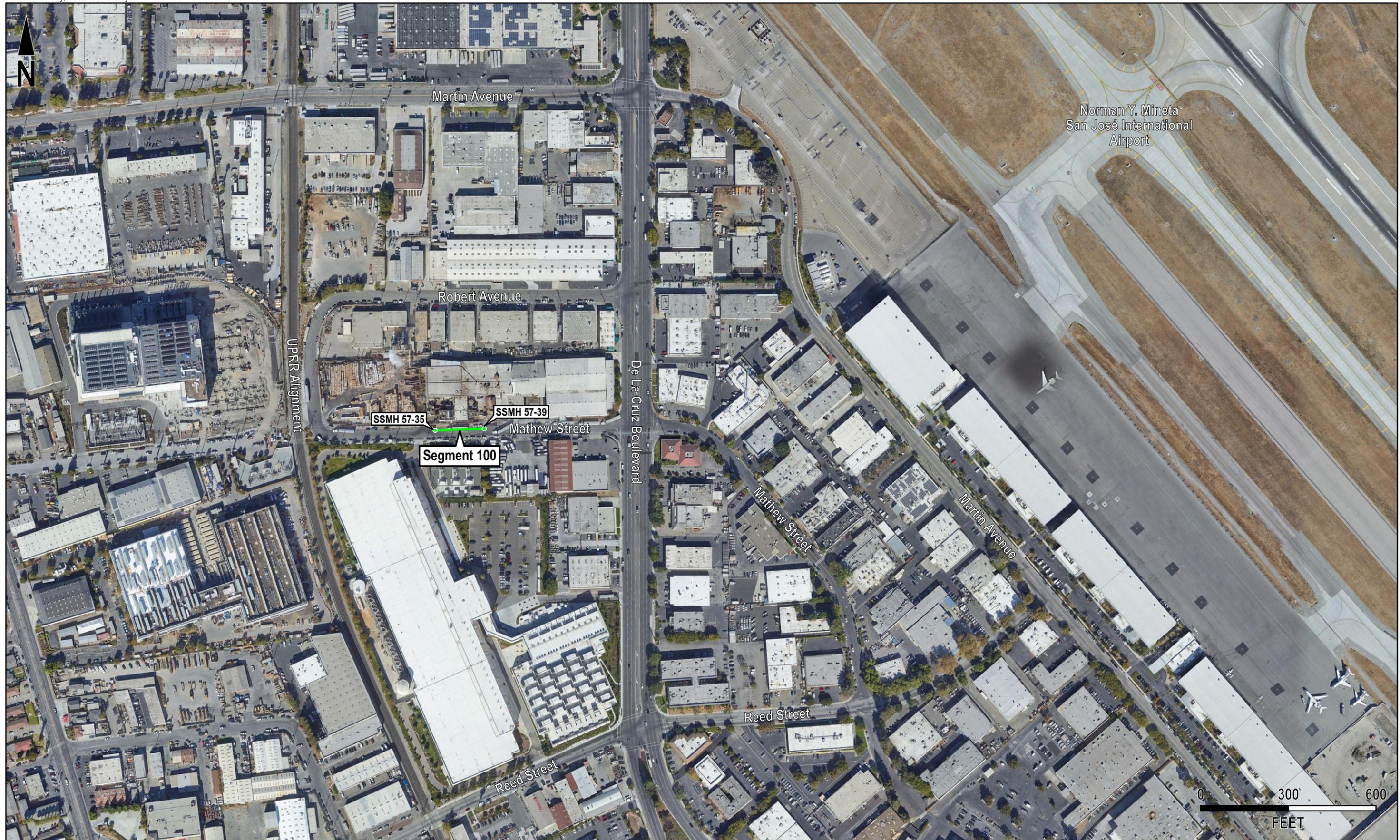
<b>Project title:</b>	Annual Sanitary Sewer Repairs 2021 – 2023, 2021 Construction Package (“Annual Sanitary Sewer Repairs, 2021 Construction Package”)
<b>Lead agency name and address:</b>	City of Santa Clara Public Works Department 1500 Warburton Avenue Santa Clara, CA 95050
<b>Project proponent name and address:</b>	<i>Same as above</i>
<b>Contact person and phone number:</b>	Vincent Luchessi, PE Senior Civil Engineer 408.615.3048

**Project Location & Description**

The attached Initial Study analyzes the environmental effects of five projects under the current phase of the City’s annual sanitary sewer repairs program, as follows:

- **Segment 100**, located in Mathew Street west of De La Cruz Boulevard: remove 166 linear feet (lf) of existing 18-inch-diameter VCP sewer line and replace it with 18-inch-diameter polyvinyl chloride (PVC) sewer line; remove and replace sanitary sewer manhole (SSMH) 57-35 at west terminus of Segment
- **Segment 231**, located in a utility easement that crosses Lafayette Street just south of Highway 237: install 278 lf of cured-in-place-pipe (CIPP) lining in existing 42-inch-diameter reinforced concrete pipe (RCP) sewer line; replace cones of SSMH 114-14 and SSMH 114-23 at termini of Segment
- **Segments 232 and 233**, located within Lafayette Street immediately to the south of Segment 231: at **Segment 232**, install 437 lf of CIPP lining in existing 42-inch-diameter RCP sewer line, replace cone of SSMH 104-9 at south terminus of Segment; at **Segment 233**, install 491 lf of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cone of SSMH 104-15 at south terminus of Segment
- **Segment 242**, located within Lafayette Street north of Tasman Drive: install 430 lf of CIPP lining in existing 42-inch-diameter RCP sewer line; replace cones of SSMH 104-17 and SSMH 104-22 at termini of Segment

Figures 1 and 2 show the locations of the projects.





<p><b>Avoidance &amp; Minimization Measures:</b></p>	<p>The City has committed to the following Avoidance and Minimization Measures (AMMs) to reduce the environmental effects of the repairs. Incorporation of these AMMs was considered in evaluating the projects' environmental impacts.</p> <p><b><u>Dust Control</u></b></p> <p>To reduce dust generation, the following measures will be required during excavation and ground disturbance. These measures reflect the requirements of the Bay Area Air Quality Management District's (BAAQMD's) Best Management Practices (BMPs) for fugitive dust control (Bay Area Air Quality Management District 2017).</p> <ul style="list-style-type: none"><li>• All exposed surfaces (potentially including contractor parking areas, staging areas, areas subject to excavation or other ground disturbance, and unpaved access roads/routes) and soil stockpiles will be watered 2 times per day</li><li>• All haul trucks transporting soil, sand, or other loose material offsite will be covered</li><li>• All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. Use of dry power sweeping will be prohibited</li><li>• All vehicle speeds in unpaved areas will be limited to 15 miles per hour</li><li>• If pavement is removed, it will be replaced as soon as possible.</li><li>• Vegetated areas disturbed during construction will be replanted/reseeded as soon as possible</li><li>• Project signage will include the name and telephone number of City staff to contact regarding dust complaints. City staff will respond and take corrective action within 48 hours. Project signage will also include the BAAQMD's phone number to ensure compliance with applicable regulations</li></ul> <p><b><u>Emissions Control</u></b></p> <ul style="list-style-type: none"><li>• Idling times will be minimized, either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes. Clear notification will be provided to all equipment operators regarding limitation on idling times</li><li>• All construction equipment will be maintained and properly tuned in accordance with manufacturer specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation</li></ul> <p><b><u>Reference Cited</u></b></p> <p>Bay Area Air Quality Management District. 2017. California Environmental Quality Act Air Quality Guidelines. (May.) Available: <a href="http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en">http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en</a>. Downloaded: December 2017.</p>
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<b>Mitigation Measures:</b>	<p>Based on analysis in the attached Initial Study, the proposed repair projects will incorporate the following mitigation measures to avoid, reduce, or compensate for potentially significant environmental impacts.</p> <p><b>Air Quality</b></p> <p><b><u>Mitigation Measure AIR-1. Toxic Air Contaminant and Odor Control</u></b></p> <p>If feasible, the City will avoid the use of styrene resins for CIPP lining.</p> <p>If the use of styrene resins cannot feasibly be avoided, the City will require the following measures to reduce the potential for exposure to toxic air contaminants during CIPP lining.</p> <ul style="list-style-type: none"><li>• All use of styrene resins will be required to adhere to the standard best practices in NASSCO's Guideline for the Safe Use and Handling of Styrene-Based Resins in Cured-in-Place Pipe (National Association of Sewer Service Companies 2020 or most current)</li><li>• Sewer main reaches to be rehabilitated via CIPP will be plugged at both ends prior to lining, and a vent will be provided at each end of the reach to provide better dispersal of vapors</li><li>• If steam curing is used, the steam exhaust will be located at least 250 feet from commercial/business park entry areas and all heating, ventilation, and air conditioning system air intakes. If this is not feasible, an alternative curing method will be used</li><li>• Adjacent facilities will be notified in writing at least 1 week prior to the start of work. Notification will include the following information.<ul style="list-style-type: none"><li>– Anticipated work dates</li><li>– An overview of the repair process, including the substances proposed for use</li><li>– Instructions to leave the premises, move farther away from the work area if possible, and contact the Santa Clara Fire Department if vapors or odors have entered the building, along with the appropriate Fire Department contact information</li><li>– An advisory to seek medical attention promptly if exposure is suspected</li><li>– A request to report any odor or health concerns to the City</li><li>– The name, phone number, and email address of the City staff member who will be responsible for answering questions and receiving and responding to reports of odors or health concerns</li></ul></li></ul> <p>Additionally, to enable further assessment of potential concerns, the City will document any calls received regarding odors or health symptoms, and if health symptoms are reported will conduct indoor air monitoring following a standard protocol appropriate to the type of resin and curing method(s) being used. Results of monitoring will be documented in City files for consideration in planning future projects. If monitoring indicates levels of any CIPP-related</p>
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emissions of any toxic air contaminant above applicable health thresholds, the City will take appropriate action to reduce the potential for exposure.

## Biological Resources

### **Mitigation Measure BIO-1. Protection of Nesting Birds (General), All Segments**

If feasible, all project-related activity within 300 feet of the proposed repair Segments will be scheduled between September 1 and January 31, outside the February 1 – August 31 nesting period.

If project-related activity at any Segment occurs during the nesting period, the City will retain a qualified biologist to conduct a preconstruction nesting bird survey covering the Segment footprint and a 300-foot-wide surrounding buffer. The survey will be conducted within 2 weeks of the start of construction-related activity at the Segment. If active nest(s) of any protected species are identified within the 300-foot-wide survey area, a no-activity buffer will be established around the nest for the duration of the nesting season, or until a biologist determines the young have fledged and left the nest, or that the nest has been abandoned. No entry into the no-activity buffer will be permitted. The no-activity buffer will be delineated in the field by or under the supervision of the biologist, using temporary construction fencing or another suitable low-impact medium. The width of the buffer will be determined by the biologist, based on the species involved, the amount of vegetative and other screening between the nest and areas where construction activity will take place, and, if appropriate, other site-specific factors. If special-status species are involved, the biologist will consult with the appropriate resource agency(ies) (California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service) in determining the width of the buffer.

### **Mitigation Measure BIO-2. Protection of Nesting Burrowing Owl, Segments 231 and 232**

If repair work at Segment 231 or Segment 232 occurs during the Western Burrowing Owl nesting season (February 1 – August 31), the City will retain a qualified biologist to conduct preconstruction surveys covering all areas of suitable habitat within 250 feet of the Segment. The survey will last a minimum of 3 hours, and will either begin 1 hour before sunrise and continue until 2 hours after sunrise or begin 2 hours before sunset and continue until 1 hour after sunset. If no owls are detected during a first survey, a second survey will be conducted. If owls are detected during the first survey, a second survey is not needed. All owls observed will be counted and their locations will be mapped.

If evidence of nesting Western Burrowing Owls is found, a 250-foot-wide no-disturbance buffer zone will be established around each occupied nest and will be delineated in the field by the biologist, using a suitable low-impact medium. Construction may proceed outside the no-disturbance buffer zones.

## Cultural Resources

### **Mitigation Measure CUL-1. Notice of Potential for Buried Cultural Resources in Construction Documents**

The potential to encounter buried cultural resources, including Native American burials, will be noted in the project construction documents.

### **Mitigation Measure CUL-2. Retention of On-Call Archaeologist**

Prior to construction, the City will retain a qualified professional archaeologist (City's Archaeologist) with experience in northern and central California archaeology on an on-call basis for the duration of all ground-disturbing activities. The City's Archaeologist will be responsible for reviewing, identifying, and evaluating cultural resources (if any) exposed during construction, for determining whether they qualify as *unique archaeological resource(s)* under CEQA, and, if needed, recommending and implementing appropriate follow-up treatment.

### **Mitigation Measure CUL-3. Worker Awareness Training for Archaeological Resources**

Prior to groundbreaking at each of the Segments, the City's Archaeologist (defined in Mitigation Measure CUL-2) will develop and present in-person, hands-on worker awareness training for archaeological resources. Training will include information on the possibility of encountering resources during construction; the types of resources that may be seen and how to recognize them; and proper procedures in the event resources are encountered. All field management and supervisory personnel and construction workers involved with ground-disturbing activities will be required to take this training prior to beginning work on the project. Upon completion of the training, workers will be required to sign a form stating that they attended the training, understand, and will comply with the information presented.

### **Mitigation Measure CUL-4. Evaluation and Treatment of Unanticipated Archaeological Discoveries**

If known or suspected archaeological resources are discovered during construction, work in the immediate area of the find will cease and the contractor will be required to notify the City before the end of the work day. The find will be protected in place until the City's Archaeologist has evaluated it and identified appropriate follow-up measures, if any. If the City's Archaeologist determines that the resource qualifies as a *unique archaeological resource* under CEQA, they will notify the City and other appropriate parties and recommend follow-up measures to reduce impacts, in accordance with Section 15064.5 of the *CEQA Guidelines*. Depending on the nature of the find, follow-up measures may include avoidance, preservation in place, recordation, monitoring during ongoing work, additional archaeological testing, and data recovery, among other options. The City's Archaeologist may recommend completion of a formal Archaeological Monitoring Plan (AMP) and/or Archaeological Treatment Plan (ATP), potentially including data recovery, if significant archaeological deposits are exposed during ground-disturbing activities. The City will be responsible for proper implementation of the AMP and ATP. If archaeological evaluation, monitoring, or treatment is required, the City's Archaeologist will prepare and file a Monitoring Closure Report with the City, documenting the nature of the find(s), evaluation methods, and outcomes.

**Mitigation Measure CUL-5. Procedures for Discovery of Human Remains**

The treatment of human remains and funerary objects discovered during any project related ground-disturbing activity will comply with all applicable state laws. If known or potential human remains are encountered during project-related activities, work within 50 feet of the discovery and in any nearby areas reasonably suspected to overlie adjacent remains will cease, the find will be protected in place, and the contractor will be required to notify the City before the end of the work day. The City will promptly notify the Santa Clara County Coroner, who will be responsible for determining whether the remains are Native American. If the Coroner determines that the remains are Native American and are not subject to their authority, they will notify the Native American Heritage Commission, which is responsible for identifying and notifying descendant(s) of the deceased so they can make recommendations regarding the treatment of the remains. The City will be responsible for facilitating the disposition of remains recommended by the Most Likely Descendant(s). If no satisfactory agreement can be reached as to the disposition of the remains pursuant to state law, the City will respectfully reinter the human remains and items associated with the burial on City property in a location not subject to further subsurface disturbance. A final report detailing the find, follow-up activities, and disposition of remains will be prepared by the City's Archaeologist or other qualified staff, and will be submitted to the City's Director of Community Development promptly following disposition of the remains. The report will be subject to review and approval by the City's Director of Community Development.

**Geology & Soils**

**Mitigation Measure GEO-1. Worker Awareness Training for Paleontological Resources**

Prior to groundbreaking, the City will retain qualified staff to develop and present in-person, hands-on worker awareness training for paleontological resources. As used here, *qualified staff* refers to an individual who satisfies one or both of the following criteria.

- A Principal Paleontologist as defined by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee 2010), who is experienced in delivering training to nonspecialists
- A California-licensed professional geologist (PG) who has expertise in South San Francisco Bay Area stratigraphy and paleontology and is experienced in delivering training to nonspecialists

Training will be concise and substantive. It will include information on the possibility of encountering fossils during construction; the types of fossils that may be seen and how to recognize them; and proper procedures in the event fossils are encountered. All field management and supervisory personnel and construction workers involved with ground-disturbing activities will be required to take this training prior to beginning work on the project. Upon completion of the training, workers will be required to sign a form stating that they attended the training, understand, and will comply with the information presented.

**Mitigation Measure GEO-2. Stop-Work, Evaluation, and Treatment in the Event of a Paleontological Find**

If vertebrate remains or other potentially significant fossil resources are discovered during project-related activities, all work in the immediate vicinity of the discovery will cease, the find

will be protected in place, and the contractor will be required to notify the City before the end of the work day. The City will detail qualified staff—i.e., staff meeting the criteria for a Qualified Professional Paleontologist as defined by the Society of Vertebrate Paleontology (Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee 2010)—to evaluate the find and recommend appropriate follow-up treatment. Work may continue on other parts of the alignment while evaluation (and, if needed, treatment) takes place, as long as the find can be adequately protected in the judgment of the qualified staff. The City will be responsible for ensuring that the recommendations of the qualified staff regarding treatment and reporting are implemented.

## Hazards & Hazardous Materials

### **Mitigation Measure HAZ-1. Contaminated Groundwater, Soil, and Soil Vapor Protection**

The contractor will be required to prepare and submit a Health and Safety Plan (HASP) for worker and public safety during all phases of sewer and manhole repair work. The HASP will be tailored to the contaminants potentially present, the media potentially affected/involved (soil, groundwater, soil vapor), and the activities planned. The HASP will be subject to review and approval by a Certified Industrial Hygienist and the City, and at a minimum will include the following requirements.

- Contractor staff will be required to wear appropriate Personal Protective Equipment (PPEs) and the contractor will be required to employ Best Management Practices (BMPs) to minimize and monitor human exposure to potential contaminants, consistent with applicable federal and state requirements, including Title 29 of the Code of Federal Regulations and California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) guidelines (California Code of Regulations, Title 8). Construction BMPs described in the HASP will include, but will not necessarily be limited to, the following
- Public access to the active work site will be prohibited using appropriate safety barriers and signage
- If contaminated soil, groundwater, or other materials encountered during construction activities qualify as hazardous waste (per California Code of Regulations, Title 22), all contractor employees (and subcontractors, if any) handling the hazardous waste will be certified in OSHA's 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training
- If dewatering is required, groundwater removed from excavations will be stored in a settling tank and tested onsite for contamination prior to discharge in accordance with applicable permit requirements. If contaminant levels are detected in excess of the applicable discharge limits per the contractor's discharge permit, the groundwater will either be treated onsite using appropriate technology (e.g., sediment filter, activated carbon filter, or other appropriate alternative methods) prior to discharge to the sanitary sewer, or will be removed from the site for appropriate offsite disposal. Groundwater treatment and offsite disposal options will be described in the HASP

- Contractor will stockpile excavated materials prior to onsite reuse as backfill or offsite disposal at an appropriately permitted landfill. Contractor will water/mist soil as it is being excavated. Stockpiled soil will be placed in areas shielded to the extent feasible from prevailing winds and will be covered with plastic sheeting to prevent fugitive dust and vapor emissions and to shield the stockpile from potential rain. Stockpiles will be placed away from drainage courses, gutters, and stormdrain inlets to prevent contact with stormwater runoff. Public access to the stockpile area(s) will be prohibited using appropriate barriers and signage. Soil exhibiting signs of potential contamination (such as staining, odors, or the presence of debris) will be placed in a separate stockpile
- Soil that does not exhibit signs of potential contamination may be reused as backfill in the excavation from which it was removed
- Excavated materials that exhibit signs of potential contamination, and excavated materials that are planned for offsite disposal at a landfill (if any), will be tested for contaminants in accordance with the receiving landfill's requirements and the U.S. Environmental Protection Agency's (EPA's) SW-846 guidelines (available: <https://www.epa.gov/hw-sw846>)
- If testing of excavated materials indicates any contaminant levels in excess of hazardous waste thresholds (per California Code of Regulations, Title 22), excavated materials will be handled and disposed of by a licensed hazardous waste disposal contractor and transported by a licensed hazardous waste hauler to an appropriately licensed and permitted disposal facility, in accordance with local, state, and federal requirements. Contractor will water/mist soil as it is being loaded onto haul trucks to prevent fugitive dust generation, and haul trucks will be covered and the truck wheels and body brushed clean to control trackout, fugitive dust, and vapor emissions during transport
- If import fill materials (e.g., soil, sand, aggregate base) are used, they will be sourced and tested in accordance with guidance from the California Department of Toxic Substances Control's Information Advisory *Clean Imported Fill Material* (available: <https://dtsc.ca.gov/information-advisory-clean-imported-fill-material-fact-sheet/>). Fill material testing results will be provided to the City for review and approval prior to importing the fill materials to the project site. No fill material will be imported for use at any of the repair Segments if it contains any contaminant at a level exceeding hazardous waste thresholds (per California Code of Regulations, Title 22) or the applicable Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) for commercial/industrial land use, with the exception of arsenic for which the naturally occurring background level of 11 milligrams per kilogram (mg/kg) (per Duvergé 2011) will apply as a limiting threshold
- The contractor will monitor ambient air in the trench and around the perimeter of the active work area for fugitive vapor emissions, including volatile organic compounds (VOCs), methane, and other sewer/landfill gases, using appropriate field screening instrumentation. If any contaminant level in excess of applicable Cal/OSHA Permissible Exposure Levels is detected, worker PPEs will be required to include inhalation protection meeting Cal/OSHA standards, and/or work will be suspended

until airborne concentrations decrease below the action threshold, as verified by ambient air monitoring. If air monitoring indicates the presence of flammable vapors in excess of their lower explosive limits (LELs) or other hazardous atmosphere conditions (e.g., oxygen-deficient atmosphere) work will be suspended until the hazardous atmosphere conditions have been mitigated as verified by air monitoring. Vapor control measures (e.g., spraying water or vapor suppressants, covering exposed soil with plastic sheeting, and ventilation of excavations and manholes) will be performed as necessary based on air monitoring results, to maintain vapor concentrations below PELs and LELs and ensure that safe oxygen levels (20.8% – 21%) are present in the trench and surrounding work area

The project Contract Documents will stipulate contractor responsibilities in implementing these requirements.

**References Cited**

National Association of Sewer Service Companies. 2020. Guideline for the Safe Use and Handling of Styrene-Based Resins in Cured-in-Place Pipe. (October.) Available: [https://www.nassco.org/wp-content/uploads/2021/02/Safe-Handling-and-Use-of-Styrene\\_Specification-Guideline-\\_2020-2.pdf](https://www.nassco.org/wp-content/uploads/2021/02/Safe-Handling-and-Use-of-Styrene_Specification-Guideline-_2020-2.pdf). Downloaded: October 2022.

Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Available: [http://vertpaleo.org/Membership/Member-Resources/SVP\\_Impact\\_Mitigation\\_Guidelines.aspx](http://vertpaleo.org/Membership/Member-Resources/SVP_Impact_Mitigation_Guidelines.aspx). Downloaded: July 2018.

## Determination

In accordance with local procedures for compliance with the California Environmental Quality Act (CEQA), the Public Works Department has completed the attached Initial Study to evaluate the potential for the proposed sanitary sewer repairs to result in significant adverse effect(s) on the environment, and on the basis of analysis in the Initial Study recommends the following determination.

- Although the projects have the potential to result in significant effects on the environment, there would not be a significant effect in this case because revisions in the project (in the form of mitigation measures) have been agreed to by the City as project proponent
- A Mitigated Negative Declaration should be prepared
- An Environmental Impact Report (EIR) is not required

## Findings

Based on the analysis and findings presented in the project Initial Study (attached), implementation of the proposed sanitary sewer repairs will not have a significant effect on the environment, for the following reasons.

- As discussed in Section 3 of the Initial Study, with the identified Avoidance and Minimization Measures and mitigation measures incorporated, potential short- and long-term environmental impacts would be avoided or reduced to Less than Significant levels

- The proposed repair projects would not 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 proposed repair projects would not make Cumulatively Considerable contributions to existing Significant cumulative impacts, nor would they individually or collectively create new Significant cumulative impacts over time. Thus, they would not have impacts that are individually limited, but Cumulatively Considerable
- The proposed repair projects would not result in environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly

This determination reflects the independent judgment of the City.

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Vincent Luchessi, PE  
Senior Civil Engineer

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Date