Middlefield Road Improvement Project

Initial Study / Mitigated Negative Declaration – *Public Draft*

County of San Mateo

August 17, 2018

PUBLIC DRAFT

Quality Information

Prepared by	Checked by	Approved by
Various authors	Rodney Jeung	Emma Rawnsley

Revision History

Revision	Revision Date	Details
0	March 27, 2018	Administrative Draft for client review
1	July 13, 2018	Screencheck Draft for print approval
2	August 17, 2018	Public Draft for public notification

Distribution List

# Hard Copies	PDF Required	Association / Company Name
1	Y	County of San Mateo Department of Public Works
15	N	State Clearinghouse
40	N	Distribution list of interested parties/organizations/agencies

Prepared for:

County of San Mateo
Department of Public Works
555 County Center, Fifth Floor
Redwood City, CA 94063-1665

Prepared by:

AECOM
100 West San Fernando
San Jose, CA, 95113
USA
aecom.com

Table of Contents

Figures

Tables

Acronyms and Abbreviations

ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
ADT	average daily trips
ALUC	County Airport Land Use Commission
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BCDC	San Francisco Bay Conservation and Development Commission
BDPL	Bay Division Pipelines
BMPs	Best Management Practices
C/CAG	City/County Association of Governments of San Mateo County
CAAQS	California Air Quality Attainment Standards
Cal Water	California Water Service Company
CalFIRE	California Department of Forestry and Fire
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CH_4	Methane
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide-equivalents
Community Plan	North Fair Oaks Community Plan
County	San Mateo County
County Code	San Mateo County Ordinance Code
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	Decibels
dBA	A-weighted decibels
DPR	California Department of Parks and Recreation
DPW	San Mateo County Department of Public Works
DWR	California Department of Water Resources
EECAP	Energy Efficiency Climate Action Plan
EPA	U.S. Environmental Protection Agency
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
FHWA	Federal Highway Administration
FOSMD	Fair Oaks Sewer Maintenance District
FWHA RD-77-108	FHWA's Roadway Noise Model
General Plan	San Mateo County General Plan
GWP	Global warming potential
HAER	Historic American Engineering Record
HASP	health and safety plan
HDPE	high density polyethylene
in/sec	inch per second
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn} or DNL	day-night average noise level

L_{eq}	Equivalent Noise Level
L_{max}	maximum noise level
LOS	level of service
LUST	Leaking Underground Storage Tank
mph	miles per hour
MSATs	Mobile Source Air Toxics
MTC	Metropolitan Transportation Commission
MUTCD	Manual on Uniform Traffic Control Devices
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NFOCC	North Fair Oaks Community Council
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM_{10}	particulate matter equal to or less than 10 micrometers in diameter
$PM_{2.5}$	particulate matter equal to or less than 2.5 micrometers in diameter
PPV	peak particle velocity
Project	Middlefield Road Improvement Project
PVC	polyvinyl chloride
RECP	Regional Emergency Coordination Plan
ROG	reactive organic gases
ROW	right-of-way
RTIP	Regional Transportation Improvement Program
RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit District
Scoping Plan	Climate Change Scoping Plan
SFBAAB	San Francisco Bay Area Air Basin
SFPUC	San Francisco Public Utilities Commission
SLF	Sacred Lands File
SMCDEH	San Mateo County Department of Environmental Health
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SO_2	sulfur dioxide
SOHP	State Office of Historic Preservation
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCP	Traffic Control Plan
TIA	Traffic Impact Analysis
TSM	transportation systems management
TSP	Transit Sustainability Project
U.S. 101	United States Highway 101
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USGS	United States Geological Survey
VCP	vitrified clay pipe
VdB	vibration decibels
VMT	vehicle miles travelled

1. Introduction

1. Project Title:	Middlefield Road Improvement Project
2. County File Number:	E4931000
3. Lead Agency Name and Address:	County of San Mateo Department of Public Works 555 County Center, Fifth Floor Redwood City, CA 94063
4. Lead Agency Contact:	Carter Choi, County Project Manager Phone: (650) 363-4100 Email: cchoi@smcgov.org
5. Project Location:	Middlefield Road between Sixth Avenue and Douglas Avenue (see Section 2.1 of Initial Study)
6. Assessor Parcel Number(s):	N/A
7. Project Sponsor's Name and Address:	County of San Mateo Department of Public Works 555 County Center, Fifth Floor Redwood City, CA 94063
8. General Plan Designation(s):	Middlefield Road from Douglas Avenue to First Avenue: adjacent to Commercial Mixed Use Middlefield Road from First Avenue to Sixth Avenue: adjacent to Neighborhood Mixed Use
9. Zoning:	Middlefield Road from Douglas Avenue to First Avenue: adjacent to C2/NFO/S-1/DR (General Commercial/North Fair Oaks/ Residential Density Combining District/Design Review) Middlefield Road from First Avenue to Sixth Avenue: adjacent to NMU/DR (Neighborhood Mixed-Use/Design Review)
10. Description of Project:	See Section 2.3 of Initial Study
11. Surrounding Land Uses and Setting:	See Section 2.2 of Initial Study.
12. Other Public Agencies Whose Approval Is Required:	See Section 2.5 of Initial Study.

This document is an Initial Study/Mitigated Negative Declaration (IS/MND) that analyzes the potential environmental impacts of the Project. This IS/MND is prepared in compliance with Public Resources Code Section 21000 et seq., California Environmental Quality Act (CEQA) of 1970 (as amended), and Title 14, Chapter 3 of the California Administrative Code. In accordance with the CEQA Guidelines, California Code of Regulations Title 14, Chapter 3, Section 15070, a Mitigated Negative Declaration shall be prepared if the following criteria are met:

- There is no substantial evidence that the Project may have a significant effect; or
- Where there may be a potentially significant effect, revisions to the Project would avoid or mitigate the effects to a point where clearly no significant effects would occur.

In accordance with Section 15073 of the CEQA Guidelines, this document is being circulated to local, state and federal agencies and to interested organizations and individuals who may wish to review and comment on the report. Comments can be submitted as follows:

By email: DPW_MiddlefieldRdProject@smcgov.org

By mail: Gil Tourel
County of San Mateo, Department of Public Works
555 County Center, Fifth Floor
Redwood City, CA 94063-1665

2. Project Description

The County of San Mateo (County) Department of Public Works proposes to implement the Middlefield Road Improvement Project (Project) in the unincorporated North Fair Oaks Area in San Mateo County, California. The proposed improvements are intended along an approximately 2,900-foot stretch of Middlefield Road from just south of Douglas Avenue in the north, to just north of Sixth Avenue in the south (the Project area).

The Project would include three main components:

- **Roadway improvements.** The Project would reconfigure Middlefield Road between Pacific Avenue and Fifth Avenue from a four-lane, two-way roadway to a three-lane (one lane in each direction with a center left turn lane) roadway with parallel parking, bike lanes, and wider sidewalks. Expanded sidewalk would be constructed to accommodate street amenities, such as benches, landscaping, street lights, trash receptacles, street art, public spaces, wayfinding signage, and low-impact development for stormwater management. More details are provided in Sections 2.3.1 through 2.3.10.
- **Utility undergrounding**. The Project would remove the existing overhead utilities between MacArthur Avenue and Fifth Avenue, and replace them with a proposed underground joint utility trench in the new southbound travel lane of Middlefield Road. More details are provided in Section 2.3.11.
- **Sanitary sewer replacement**. The Project includes replacing the existing sewer lines between Douglas Avenue and Sixth Avenue as part of a sanitary system upgrade. More details are provided in Section 2.3.12.

2.1. Project Area

The Project would occur along an approximately 2,900-foot-long section of Middlefield Road, from just south of Douglas Avenue in the north, to just north of Sixth Avenue in the south. The Project area and the surrounding Project vicinity in unincorporated North Fair Oaks are illustrated in Figure 2.1-1. For the purposes of this document, Middlefield Road is described as having a north–south orientation, while cross streets are described as having an east–west orientation.

The limits of work for the three Project components vary, as follows:

- Roadway improvements: between Pacific Avenue and Fifth Avenue.
- Utility undergrounding: between MacArthur Avenue and Fifth Avenue.
- Sanitary sewer replacement: between Douglas Avenue and Sixth Avenue.

Middlefield Road is a minor arterial roadway connecting Redwood City in the north with Sunnyvale in the south. Within the Project area, Middlefield Road is a four-lane, two-way road, with 125 angled on-street parking spaces, and sidewalks approximately 5 to 8 feet in width. The Middlefield Road right-of-way (ROW) is approximately 86 feet wide through most of the Project area. There are no bike lanes along Middlefield Road.

The Project area includes the full width of the Middlefield Road ROW between Douglas Avenue and Sixth Avenue, and extends along the adjacent ROWs of the intersecting streets in between. The limits of work for intersecting streets would typically extend approximately 60 to 120 feet from the Middlefield Road centerline in each direction, with the exception of Second and Dumbarton Avenues, where the limits of work to the west of Middlefield Road would extend 180 feet and 340 feet, respectively.

At the northern end of the Project area, just south of its intersection with Northside Avenue, Middlefield Road crosses a railroad ROW owned by the Union Pacific Railroad (UPRR) that is primarily used by freight trains. In the vicinity of the Berkshire Avenue intersection, Middlefield Road crosses a ROW for the Hetch Hetchy water supply system, owned by the San Francisco Public Utilities Commission (SFPUC).

Transit service in the Project vicinity is provided by the San Mateo County Transit District (SamTrans) buses and Caltrain commuter rail. Three SamTrans routes operate along Middlefield Road:

- Route 296 between the Redwood City Caltrain Station and Bayshore / Donohoe in East Palo Alto.
- Route 297 between the Redwood City Caltrain Station and the Palo Alto Transit Center.
- Route 397 (an express and multi-city route) between the Palo Alto Transit Center and San Francisco International Airport.

SamTrans bus stops in the vicinity of the Project area are at Douglas Avenue (northbound), Dumbarton Avenue (northbound and southbound), Second Avenue (northbound and southbound), and Fifth Avenue (northbound and southbound).

In addition, the following utilities serve the Project area:

Gas and Electricity	Pacific Gas and Electric Company (PG&E)
Sanitary Sewer	Fair Oaks Sewer Maintenance District
Water	California Water Service Company Bear Gulch District SFPUC
Street Lighting	Menlo Park Highway Lighting District
Cable, Phone, and Internet	AT&T California AT&T Fiber Optics Zayo (formally Above Net Communications) Comcast Level 3 Networks Verizon Business

2.2. Surrounding Land Uses

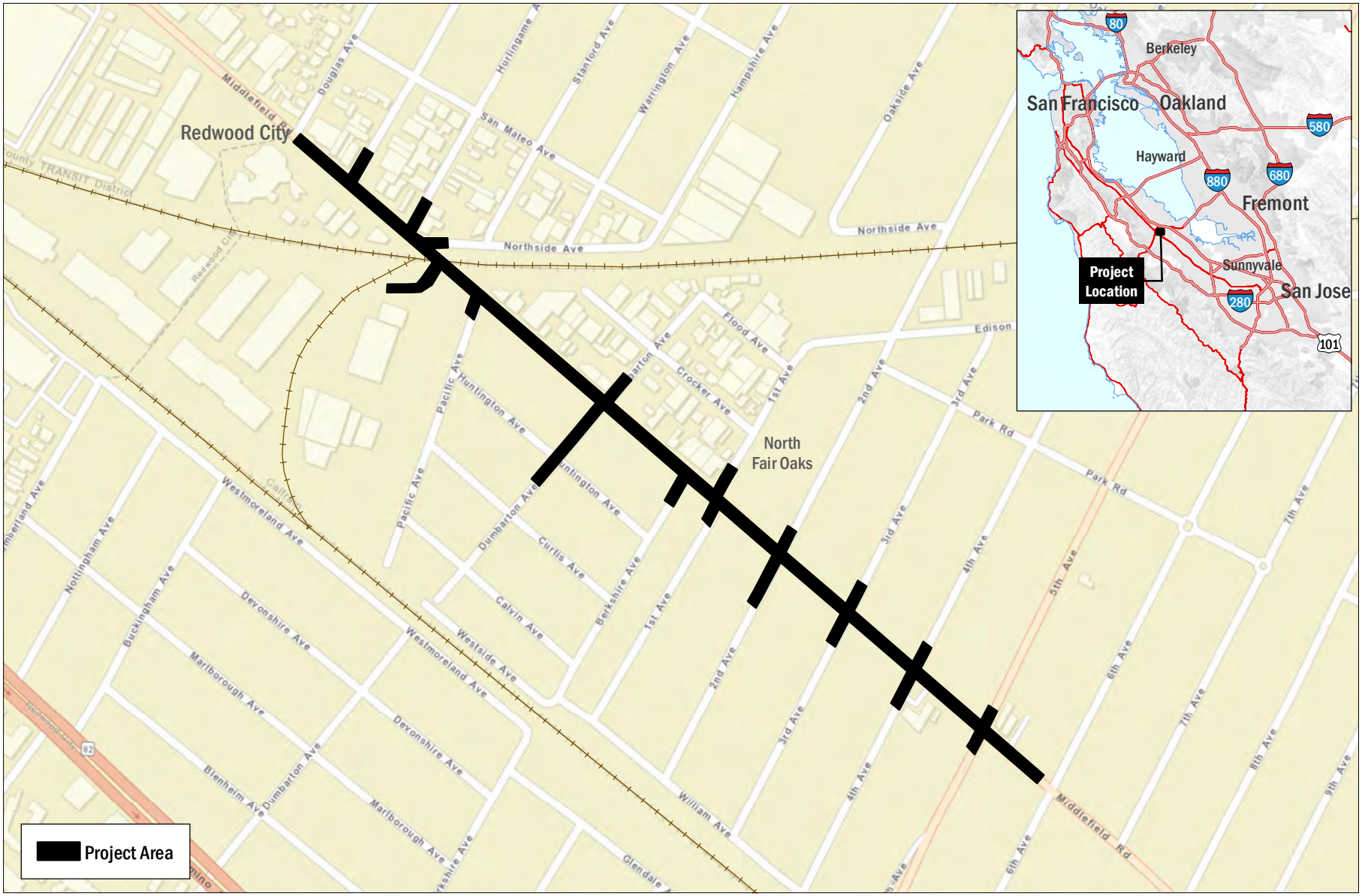
The Project area traverses most of the North Fair Oaks community. Properties abutting the Middlefield ROW are mostly retail, commercial, or light industrial uses, such as locally-owned restaurants, hair and beauty salons, professional offices, retail stores, auto body and repair workshops, and used car sales.

In the north portion of the Project area, just south of the railroad tracks and to the west of Middlefield Road, is the Fair Oaks Health Center and an area known as Middlefield Junction, that is planned for development of affordable housing and community-serving uses to complement the Health Center. The Redwood Junction Industrial Park is located north of the Health Center, and is accessed from the Health Center driveway off Middlefield Road. The Fair Oaks Community Center and the Fair Oaks Branch Library are adjacent to Middlefield Road just north of the railroad crossing.

2.3. Project Characteristics

2.3.1. Roadway Improvements

The Project would repave and reconfigure Middlefield Road from a four-lane (two-way roadway in each direction) to a three-lane roadway that consists of a single southbound lane, a single northbound lane, and a continuous left turn lane between the northbound and southbound lanes. All proposed travel lanes would be 11 feet wide. Roadway improvements would be limited to the portion of the Project area from Pacific Avenue in the north, to just north of Fifth Avenue in the south. Repaving would also extend slightly along the intersecting streets within this section of the Project area. Conceptual plans for the proposed roadway improvements are shown in Figures 2.3-1 and 2.3-2. Design drawings (90 percent design) are included in Appendix A.



AECOM

County of San Mateo

Middlefield Road

FIGURE 2.1-1

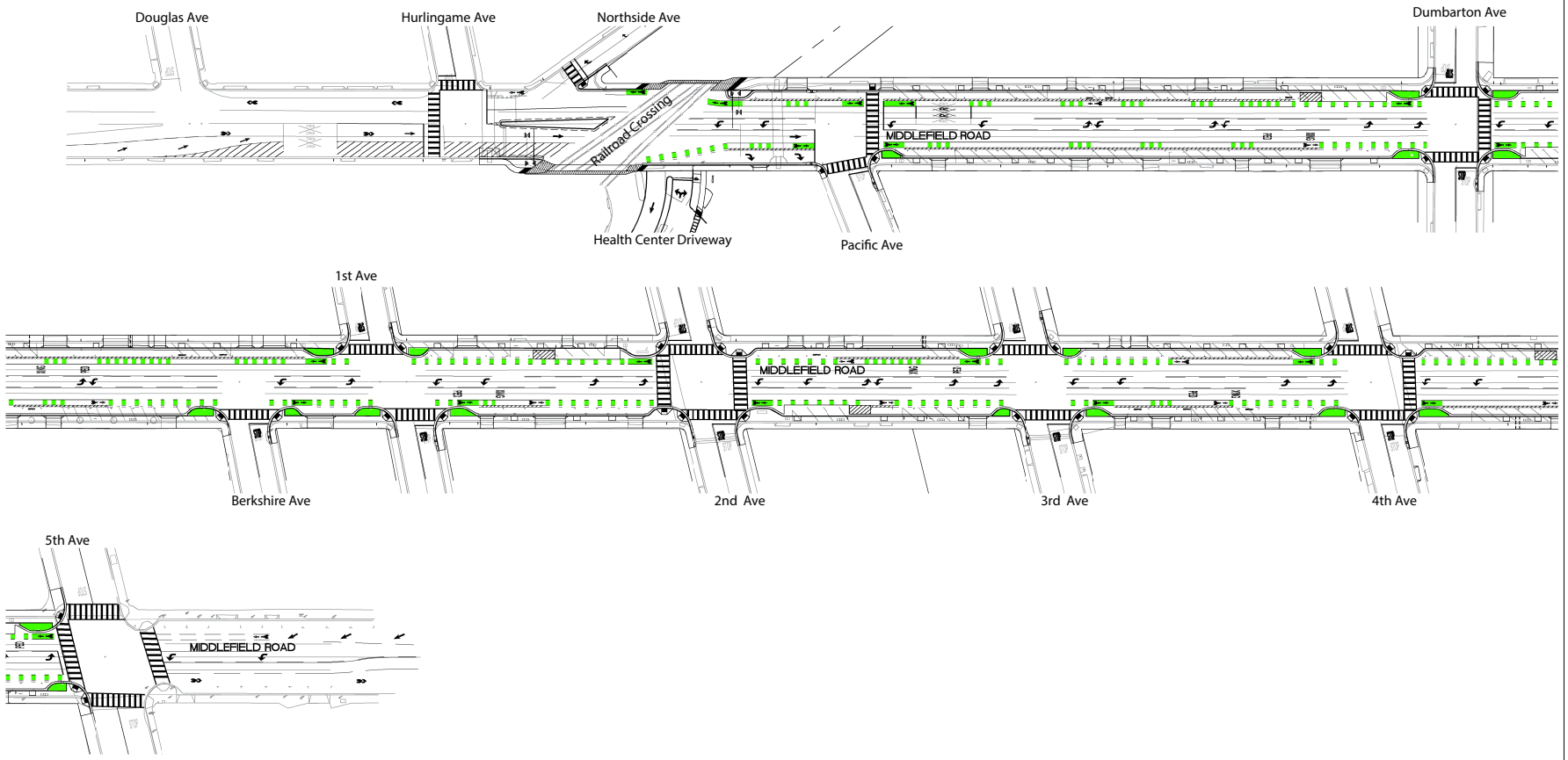
Project Area and Vicinity

RHAA
AECOM

AECOM
County of San Mateo
Middlefield Road

FIGURE 2.3-1

Conceptual Roadway Improvements - Perspective View



City of San Mateo
AECOM

AECOM
County of San Mateo
Middlefield Road

FIGURE 2.3-2

Conceptual Roadway Improvements - Plan View

This page intentionally left blank.

In recommending a reduced number of travel lanes from the existing conditions, the Project calls for a "road diet." Road diets, also known as road conversions, reallocate road space by reducing the number of vehicular travel lanes, most often with the purpose of improving mobility for non-motorized roadway users such as pedestrians and bicyclists and creating space for installation of green infrastructure for stormwater treatment. The reduction in travel lanes may also be accompanied by lane narrowing and other traffic calming measures that can reduce traffic speeds by lowering the speed threshold at which motorists intuitively feel comfortable traveling when using the roadway.

2.3.2. Parking

The Project would replace the existing diagonal parking along both sides of Middlefield Road with 8-foot-wide parallel parking spaces along the sidewalk curbs. The parallel parking spaces would have a diagonally striped buffer between the parking spaces and the bike lanes. Conversion from angled to parallel parking and construction of bulb-outs (described below) at all intersections would result in a loss of 55 parking spaces compared to existing conditions. As a separate project, the County has completed construction of a surface parking lot that created 44 parking spaces at the southwest corner of Middlefield Road and Second Avenue. Additionally, another parking lot will be constructed at Berkshire Road and Huntington Avenue that will add 16 parking spaces.

2.3.3. Bike Lanes

The Project would include 6.5-foot-wide buffered bike lanes that parallel the southbound and northbound lanes and would be between the vehicular lanes and the parking spaces (see Figure 2.3-1).[1] Buffered bike lanes provide greater separation between motor vehicles and bicyclists, and space for bicyclists to pass other bicyclists without encroaching into the adjacent motor vehicle travel lane, without making the bike lane appear so wide that it might be mistaken for a travel or parking lane.

2.3.4. Sidewalks and Bulb-Outs

The Project would widen sidewalks to 12 feet, providing for a pedestrian zone and space for amenities, such as benches, landscaping, street lights, trash receptacles, street art, and public spaces. Sidewalk paving could include standard paving or mosaic tiles interspersed with concrete paving.

Bulb-outs, also known as curb extensions, are planned at each intersection between Pacific and Fifth Avenues. The bulb-outs would extend the widened sidewalks at the intersections by an additional 8 feet (see Figure 2.3-1) which would reduce crosswalk length at each intersection (varies by intersection, but in general on the order of 45 feet). The bulb-outs would benefit pedestrians by increasing pedestrian visibility, shortening the turning movements of slow turning vehicles, and visually narrowing the roadway. Bulb-outs would also create opportunities for added public spaces, landscaped areas, stormwater treatment facilities, and possibly transit waiting areas.

2.3.5. Bus Stops

The existing bus stops in the Project area would be improved for passenger convenience and faster boarding and off boarding. The bus stops would be moved from upstream to downstream of intersections to improve traffic flow. Bus stops would be 60 feet in length with tapers to ease bus movements entering and exiting each bus stop. SamTrans is investigating the possibility of adding shelters at bus stops in the Project area, but such improvements are not part of this Project.

2.3.6. Street Trees

Street trees would be planted approximately 35 feet apart, on average, along both sides of Middlefield Road between Pacific and Fifth Avenues to enhance the street aesthetics. The conceptual street tree

[1] Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane.

design is shown in Figure 2.3-3. Planned street trees would include some combination of the following types of trees:

- Standard medium to large size trees, such as red pointe red maple (*Acer rubrum 'Frank Jr'*) and Brisbane box (*Lophostemon confertus*); and
- Accent trees, such as Gold Maidenhair (*Gingko biloba 'Princeton Sentry'*) and Purple Flowering Locust (*Robinia pseudoacacia 'Purple Robe'*).

Tree species selection would consider:

- form, mature size, color, texture and patterns to reflect the urban design goals;
- mature tree canopy size and density foliage with respect to views of signage and building fronts, road and pedestrian lighting, and buses at bus stops;
- potential for root systems to affect sidewalks, curbs and utilities; and
- climate appropriate and low-water requirements.

Tree placement, as summarized in Figure 2.3-3, would include placing accent trees at Pacific and Fifth Avenues, with alternating standard tree species between. Tree placement would avoid motorist, bicyclist, and pedestrian sight lines from intersections and at driveways.

2.3.7. Street Lighting

Street lighting would consist of approximately 27-foot-tall roadway lights and may include 16-foot-tall pedestrian lights. The street light fixture layout would coincide with the street tree design. The street lighting will meet County lighting requirements for roadway and sidewalk conditions. The conceptual street lighting design is shown in Figure 2.3 4. Street lighting fixtures would be "rust" colored, as selected by the North Fair Oaks Community Council (NFOCC) at their January 2018 meeting and would use energy efficient light-emitting diode (LED) bulbs.

2.3.8. Site Furnishings

The Project would include seating, bike racks, trash receptacles, signage, and public art. Site furnishings would be placed in the widened sidewalk and setback from the curb to avoid car door swings at parking spaces, driveways, and bus activity. Site furnishings may also be placed within bulb-outs where sidewalk widths are extended into the parking lane. Conceptual options for street furnishings are shown in Figure 2.3-4.

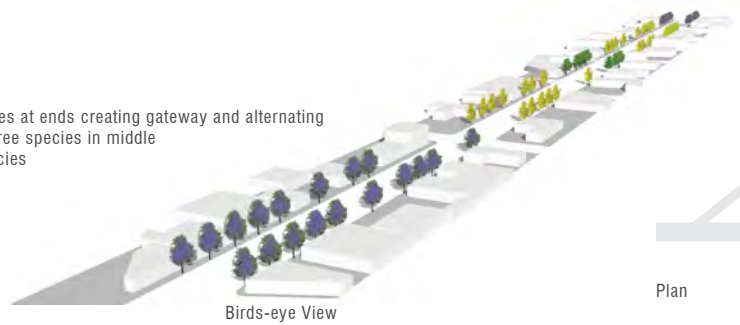
2.3.9. Drainage Improvements

Most of the bulb-outs would include a 7-foot-wide bioretention basin that consists of vegetated permeable soils (the other bulb-outs would be vegetated with traditional vegetation and not accept runoff from the gutter system or would be concrete). The bioretention basins would accept runoff from the planned curb and gutters and allow attenuation and potential infiltration of a portion of the runoff to underlying soils. The remaining runoff would be discharged to the existing public drain system in Middlefield Road and adjacent streets. A conceptual perspective view of proposed bioretention basins is shown in Figure 2.3-1.

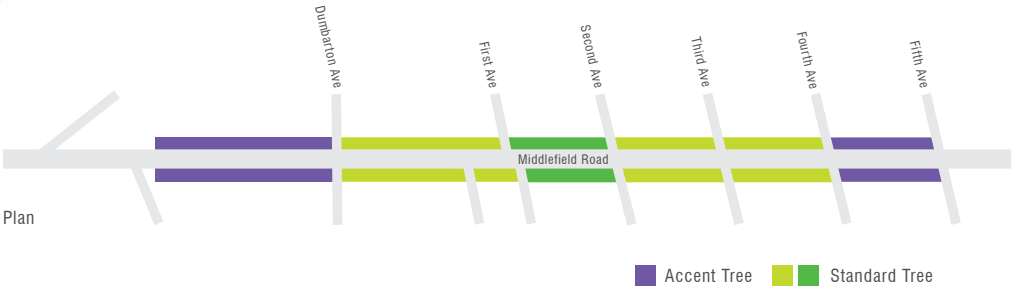
2.3.10. North Fair Oak Health Center Driveway Modifications

The North Fair Oak Health Center at 2710 Middlefield Road is near the northern end of the Project area. Access to the property is via a driveway immediately southwest of the UPRR at-grade crossing and the access driveway is within the UPRR easement. The railroad tracks adjacent to the clinic are owned by Caltrain and the UPRR maintains and has operating rights on the line. These tracks have limited freight service.

- Accent trees at ends creating gateway and alternating standard tree species in middle
- 3 tree species



Birds-eye View



Plan

Accent Tree Standard Tree

RHAA
AECOM

AECOM
County of San Mateo
Middlefield Road

FIGURE 2.3-3
Conceptual Street Tree Layout

Roadway Light

Pedestrian Light

Standard Bench - with back

Standard Bench - backless

Bike Rack

Selected Color: Rust
(To match existing lights on Middlefield Rd. south of 5th Ave. and on 5th Ave.)

San Mateo County Standard

Trash Receptacle
(County standard colors only)

Recycling Receptacle
(County standard colors only)

RHAA
AECOM

AECOM
County of San Mateo
Middlefield Road

FIGURE 2.3-4

Conceptual Street Lighting and Furnishing Designs

Recent improvements were made to the existing North Fair Oak Health Center driveway to support an increase from 30 employees to 110 employees. However, these improvements were not authorized by the California Public Utilities Commission (CPUC), which was required due to the proximity of the driveway to the railroad tracks. To comply with the CPUC's requirements, the Project would relocate and modify the Health Center's driveway and nearby road geometry. The improvements would likely[2] include relocation, re-striping, and addition of a raised median at the Health Center driveway; relocation of signage; replacement and relocation of track signal equipment and curbs; and signalization of the driveway access with railroad preemption; as shown on Figure 2.3-5. Northside Avenue between Stanford Avenue and Middlefield Road would be restricted to one-way (westbound), with right turn only onto Middlefield Road.

2.3.11. Utility Relocation

The Project would remove the existing overhead utilities and replace them with a proposed underground joint utility trench in the vehicle lane of Middlefield Road, to improve safety and accessibility for pedestrians. This joint trench would accommodate PG&E electrical, telephone, and cable/internet services. Placement of the joint trench in the vehicle lane would reduce the number of junction boxes in the adjacent bike lane and simplify the geometry of the conduit duct banks leading to the sidewalk areas where most underground electrical boxes (for electrical transformers and switches) and secondary utility boxes (telephone and cable) would be located. The joint trench would be a maximum of six feet below existing ground surface. The area of utility undergrounding and joint trenching would extend from MacArthur Avenue in the north, to Fifth Avenue in the south, and would also extend along intersecting streets within this section of the Project area. For most side streets, the joint trench would extend approximately 60 to 120 feet to the east or west of Middlefield Road, with the exception of Dumbarton and Second Avenues, where the joint trench would extend approximately 340 and 180 feet to the west of Middlefield Road respectively.

2.3.12. Sewer Replacement

The Project would also include replacement of approximately 6,550 linear feet of the existing sanitary sewer mains within the Middlefield Road ROW to improve the condition and reliability of the sewer collection system. The existing 6-, 8-, and 24-inch diameter vitrified clay pipes (VCP) would be replaced with new 6-, 8-, and 24-inch polyvinyl chloride (PVC) or high density polyethylene (HDPE) pipes. The majority of existing 6-inch lines would be upsized to 8-inch lines. The 28 existing brick manholes in the Project area would be replaced with concrete manholes. The area of sewer replacement would extend further than the roadway improvements, from approximately Douglas Avenue in the north, to just north of Sixth Avenue in the south.

2.4. Construction Activities and Schedule

Construction activities for the Project would involve:

- Installation of temporary traffic control, striping, and erosion/sediment control measures.
- Removal of existing pavement, to maximum depth of 2.5 feet.
- Construction of joint utility trench for undergrounding of utilities, to maximum depth of 6 feet.
- Removal of existing overhead utilities.
- Removal and replacement of existing sewer pipelines and manholes, most likely using open cut (or pipe bursting) methods, to maximum depth of 6 feet.
- Construction of new pavement, curbs, and sidewalks.
- Installation of new signage, striping, pedestrian crossing signals, green infrastructure, street furniture, landscaping and irrigation systems.

[2] Proposed improvements may change during final design.

Typical construction equipment and vehicles would be utilized, including backhoe, jackhammers, saw cutter, loader, compactor/roller, asphalt truck, concrete trucks, dump trucks, and electrical generators.

Construction is estimated to start in Spring 2019, and would take approximately 12 to 18 months. Construction hours would typically be 8:00 AM to 4:00 PM Monday through Friday. If additional construction outside of those hours is required, it would comply with the County's restrictions on construction hours (i.e., 7:00 AM to 6:00 PM Monday through Friday; 9:00 AM to 5:00 PM Saturday; no construction on Sundays, Thanksgiving, or Christmas). An average of approximately 30 construction workers would be required per day.

The total area of disturbance during construction would be approximately 5.5 acres; however, construction would be phased to minimize disruption to access for local businesses and residents, parking, and through traffic. Details of construction phasing would be finalized prior to construction, but a draft construction staging concept has been prepared for the Project as part of the 90 percent design drawings. To minimize disruption to businesses, and for areas where all three Project components overlap (utility undergrounding, roadway improvements, and sanitary sewer replacement), the staging concept proposes to construct each side (east and west) of Middlefield Road separately, such that one side of the street can be used to maintain one lane of traffic in each direction during construction on the other side of the street. Construction along each side of Middlefield Road would progress approximately two blocks at a time, thereby minimizing the period that adjacent businesses would have active construction occurring along their frontage. On-street parking would be preserved within the non-active construction segments to the extent possible during construction. Flaggers at block entrances would signal the movement of the barricades to grant access to delivery trucks and vehicle service business customers to properties within the active construction segment. Temporary pedestrian pathways would be provided to maintain customer access to local businesses throughout construction.

The estimated cut volume for the Project would be approximately 22,000 cubic yards, with a total of approximately 17,000 cubic yards requiring off-haul. Approximately 11,000 cubic yards of new base, asphalt, and concrete materials would be imported for the Project.

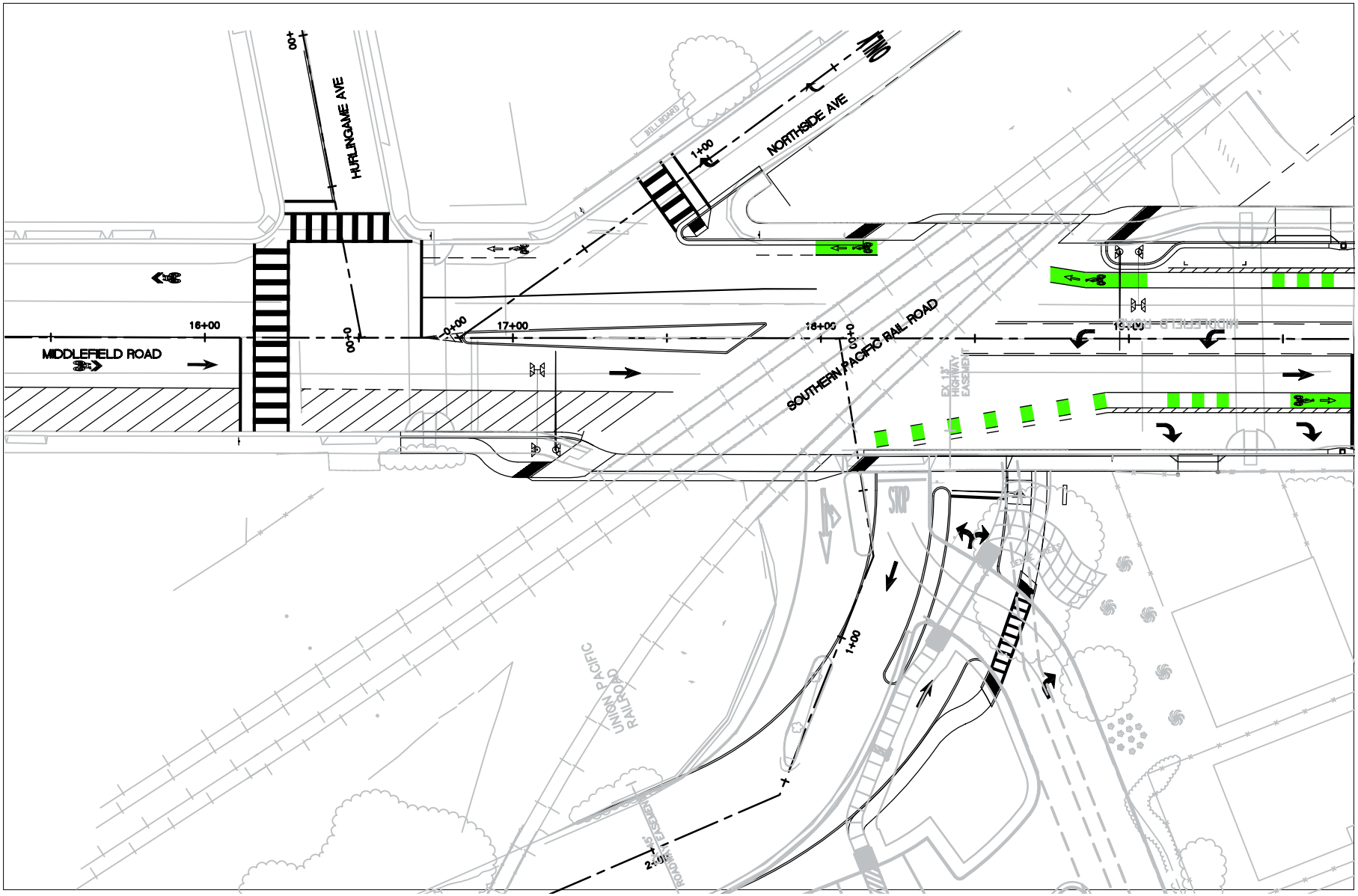
2.5. Project Approvals

Implementation of the Project will require the following permits and/or approvals:

- County of San Mateo Board of Supervisors' adoption of the IS/MND and the Mitigation Monitoring and Reporting Program
- UPRR encroachment permit
- Coordination with SFPUC to cross the Hetch Hetchy ROW
- State Water Resources Control Board (SWRCB) approval of Notice of Intent for Construction General Permit.

The Project, or components thereof, may also require approvals from the following agencies:

- CPUC
- Caltrain
- SamTrans
- PG&E
- Fair Oaks Sewer Maintenance District



City of San Mateo
AECOM

AECOM
County of San Mateo
Middlefield Road

FIGURE 2.3-5

Conceptual Railroad Crossing and Health Center Driveway Modifications

This page intentionally left blank

3. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" or "Significant Unless Mitigated" as indicated by the checklist on the following pages.

- ☐ Aesthetics
- ☒ Biological Resources
- ☒ Hazards & Hazardous Materials
- ☐ Mineral Resources
- ☐ Public Services
- ☒ Utilities / Service Systems
- ☐ Agriculture Resources
- ☒ Cultural Resources
- ☒ Hydrology / Water Quality
- ☒ Noise
- ☐ Recreation
- ☒ Mandatory Findings of Significance
- ☒ Air Quality
- ☒ Greenhouse Gas Emissions/ Climate Change
- ☐ Geology / Soils
- ☐ Land Use / Planning
- ☐ Population / Housing
- ☒ Transportation / Traffic

This page intentionally left blank.

4. Evaluation of Environmental Impacts

4.1. Aesthetics

Environmental Setting:

The Project area is in North Fair Oaks, an unincorporated community in San Mateo County. Middlefield Road is a paved street with crosswalks, sidewalk sections, and diagonal parking places. Properties abutting the Middlefield Road ROW are mostly retail, commercial, or light industrial uses, such as locally-owned restaurants, hair and beauty salons, professional offices, retail stores, auto body and repair workshops, and used car sales. In addition, the San Mateo County Sheriff's office and County Human Services office are in the Project area. These typically one- and two-story buildings vary in architectural style, height, color, and bulk. Many of the buildings are over 45 years of age. In addition, overhead utility lines and billboards line both sides of the Middlefield Road ROW.

On the west side of Middlefield Road, in the vicinity of the railroad crossing, are the Fair Oaks Health Center, Fair Oaks Community Center, and Fair Oaks Branch Library. The Fair Oaks Health Center is a recently constructed, three-story, modern-styled medical clinic. The parcel behind the Health Center, known as Middlefield Junction, is planned for development of affordable housing and community-serving uses to complement the Health Center. The Redwood Junction Industrial Park is located north of the Health Center and Middlefield Junction site.

Figure 4.1-1 shows representative views of Middlefield Road from Fifth Avenue looking north toward the railroad tracks, and from the railroad tracks looking south toward Fifth Avenue. Viewers of the Project area include motorists, employees and patrons of local businesses, pedestrians, and bicyclists. As seen in these photographs, the visual character and quality of the Project area would be described as automobile dominated; low-density, and without visual amenities.

Scenic Highways and Corridors

State Route (SR) 1, from the Santa Cruz County line to Half Moon Bay; SR 35, from the Santa Cruz County line to SR 92; and I-280, from the Santa Clara County line to the San Bruno city limit, have been designated by the California Department of Transportation (Caltrans) as California Scenic Highways (Caltrans 2017). The Project area is distant and not visible from these roadways.

Scenic Vistas

There are no designated scenic vistas within North Fair Oaks (San Mateo County 2011). Kings Mountain is approximately 7 miles west of North Fair Oaks and provides a visual backdrop and orienting feature for the North Fair Oaks community (San Mateo County 2011).

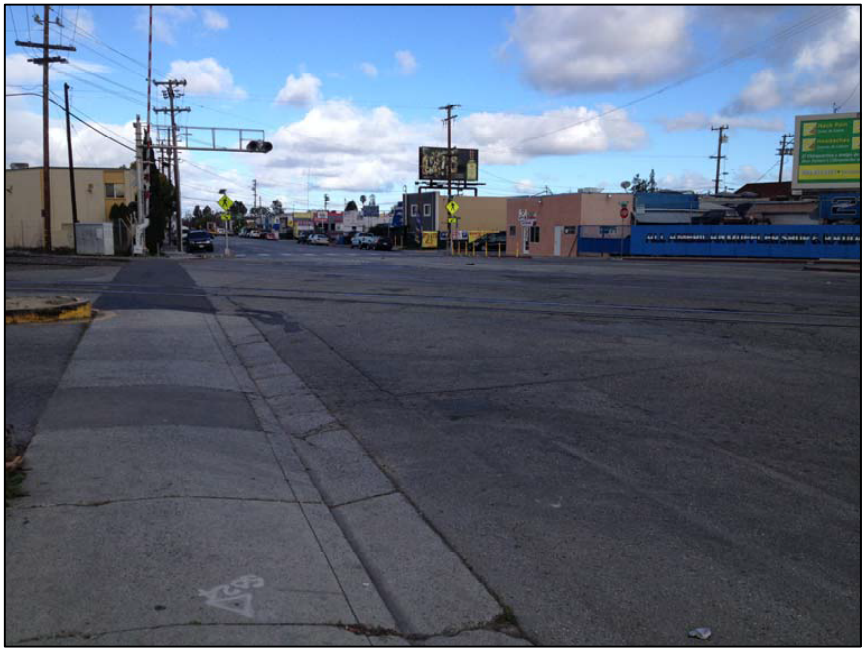
Viewpoints from Kings Mountain provide motorists and visitors distant views of the Project area with San Francisco Bay in the background (San Mateo County 2011). These distant views from Kings Mountain overlook urban development that is visually similar to urban development within and in the vicinity of the Project area.

Light and Glare

The Project area is located in an urbanized environment and is surrounded by existing sources of light and glare. These sources of light and glare include existing streetlights along Middlefield Road, exterior lighting on commercial and industrial buildings, illuminated signage, reflective building material, and vehicular headlights.

View of Middlefield Road from Fifth Avenue, Looking North

View of Middlefield Road from the Railroad Crossing, Looking South



AECOM

AECOM
County of San Mateo
Middlefield Road

FIGURE 4.1-1
Representative Views of Middlefield Road

Sources:

California Department of Transportation (Caltrans). 2017. California Scenic Highway Mapping System. San Mateo County. Available: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed December 6, 2017.

San Mateo County. 2011 (October). Final Environmental Impact Report for Proposed North Fair Oaks Community Plan Update. Available: http://planning.smcgov.org/north-fair-oaks-community-plan, accessed on October 26, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
1.a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒

Discussion:

Although there are no designated scenic vistas in North Fair Oaks, Kings Mountain is seven miles west of the Project area, and views of the Project area occur from Kings Mountain (San Mateo County 2011). Because of the distance of the Project area from Kings Mountain and the density of urban development in the Project area, the Project area and the Project features that might be visible, such as the new street trees, would be indistinguishable from the surrounding area. Therefore, the Project would not have a substantial adverse effect on a scenic vista.

Conclusion:

There would be no impacts from the Project.

Sources:

San Mateo County. 2011 (October). Final Environmental Impact Report for Proposed North Fair Oaks Community Plan Update. Available: http://planning.smcgov.org/north-fair-oaks-community-plan, accessed on October 26, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
1.b. Substantially damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

Discussion:

Because of the surrounding urban development, Middlefield Road is not visible from Scenic Highway I-280. In addition, Middlefield Road is not a County-designated scenic corridor nor is Middlefield Road visible from any County-designated scenic corridors (San Mateo County 1984). Therefore, the Project would not affect scenic resources, including those within a state scenic highway or County scenic corridor.

Conclusion:

There would be no impacts from the Project.

Sources:

San Mateo County. 1984. San Mateo County General Plan Scenic Corridors. Available: http:// planning. smcgov.org/documents/san-mateo-county-scenic-corridors, accessed December 6, 2017.

Would the project: 1.c. Substantially degrade the existing visual character or quality of the site and its surroundings?	Potentially Significant Impact ☐	Significant Unless Mitigated ☐	Less Than Significant Impact ☒	No Impact ☐

Discussion:

Construction:

Construction is estimated to take approximately 12 to 18 months and would be phased to occur in two or three segments. Construction of the Project would include removal of existing pavement; construction of a joint utility trench; removal and replacement of existing sewer pipelines and manholes; and installation of new signage, striping, pedestrian crossing signals, green infrastructure, street furniture, landscaping, and irrigation systems.

Motorists, employees and patrons at local businesses, pedestrians, and bicyclists would experience temporary visual impacts from the presence of construction equipment and vehicles and storage of construction materials. Because construction activities would be temporary and short term, construction of the Project would not substantially degrade the visual quality and character of the Project area and impacts would be less than significant.

Operation:

The Project would include street trees, lighting fixtures, sidewalk paving, seating, and public art that would provide visual detail and interest and improve the visual character of the Project area (see Figures 2.3-1 through 2.3-4). In addition, the Project would further improve the visual character of the Project area by removing existing overhead utilities and placing them underground.

Improvements to Middlefield Road would comply with design standards and guidelines in Chapter 7, "Design Standards and Guidelines," of the North Fair Oaks Community Plan (Community Plan). These standards and guidelines provide the overall framework for street improvement design in the community, and, specific to Middlefield Road, are intended to improve the design and character of the street, helping Middlefield Road fulfill its function as the "Main Street" or "Destination Street" in North Fair Oaks (San Mateo County 2011). The Project would support Community Plan design standards and guidelines policies by:

- Providing site furnishings, such as benches, bike racks, trash receptacles, street signage, and public art, that create an opportunity for distinctive design and public art elements (Policies A4-4, B5-1, B-10, B1-13).
- Creating bulb-outs that provide opportunities for added public spaces, landscaped areas, and possibly transit waiting areas (Policy B1-8).
- Incorporating artwork, such as mosaics, murals, banners, and sculptures, into project design (Policies A3-4 and A5-3).
- Incorporating sidewalk paving that includes standard paving, or mosaic tiles interspersed with concrete paving (Policy A5-2).
- Installing street trees along both sides of the street with the form, mature size, color, and texture of street trees and the patterns of placements reflecting the urban design goals of the street and community (Policy A2-6).
- Including an option to install pedestrian-scale lighting along Middlefield Road that adds character and identity to the street (Policies A4-2 and B1-9).

For the reasons described above, the Project supports Community Plan design standards and guidelines for improvements to Middlefield Road. Overall, the Project would improve the visual quality and character of the Project area and impacts would be less than significant.

Conclusion:

The impacts would be less than significant and no mitigation would be required.

Sources:

San Mateo County. 2011 (December). North Fair Oaks Community Plan. Chapter 7, Design Standards and Guidelines. Available: http://planning.smcgov.org/general-plan, accessed November 19, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
1.d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion:

Construction:

Construction activities would occur during the daytime, so that nighttime lighting would not be expected during construction. Some nighttime lighting may be needed for site security during the construction period, but lighting for this purpose would be shielded to reduce spillover onto neighboring properties. Therefore, Project construction would not introduce or create a new source of light that would affect day or nighttime views, and the impact would be less than significant.

Operation:

The existing street and pedestrian lighting along Middlefield Road would be replaced with new roadway lights (approximately 27 feet in height), and 16-foot-tall pedestrian lights may also be installed. While the level and intensity of lighting provided by new roadway and pedestrian lights would be brighter and "whiter" than existing conditions due to the use of LED bulbs, the Project would improve the uniformity of lighting within the Project area, and would provide for increased safety and security. Street lighting would be directed downward at the roadway, while pedestrian lighting would be directed downward over the sidewalks to improve safety and comfort, to reduce spill onto adjacent properties in accordance with the design standards and guidelines of the North Fair Oaks Community Plan (San Mateo County 2011). The proposed lighting would not impact day or nighttime views in the area, and would result in benefits for pedestrians; therefore, impacts would be less than significant.

Conclusion:

The impacts would be less than significant and no mitigation would be required.

Sources:

San Mateo County. 2011 (December). North Fair Oaks Community Plan. Chapter 7, Design Standards and Guidelines. https://planning.smcgov.org/north-fair-oaks-community-plan, accessed November 19, 2017.

4.2. Agricultural and Forestry Resources

Environmental Setting:

The Project area is entirely urbanized with retail, commercial, and light industrial uses. There is no agricultural or forest land in the Project area, nor any land zoned for agricultural or forestry uses (San Mateo County 1986). The California Department of Conservation classifies the Project area and the surrounding vicinity as urban and built-up land. The Project area is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), and is not subject to Williamson Act contracts (CDC 2012; 2016).

California Department of Conservation (CDC). 2012. San Mateo County Williamson Act FY 2006/2007. Available at ftp://ftp.consrv.ca.gov/pub/dlrp/WA/SanMateo_06_07_WA.pdf. Accessed July 20, 2017.

_____, 2016. San Mateo County Important Farmland. Available at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/smt14.pdf. Accessed July 20, 2017.

San Mateo County. 1986. San Mateo County General Plan. Available: http://planning.smcgov.org/general-plan, accessed November 19, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
2.a. For lands outside the Coastal Zone, 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?	☐	☐	☐	☒

Discussion

Because there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the Project area, construction or operation of the Project would not convert farmlands to non-agricultural use and there would be no impact.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
2.b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

Discussion:

Because there is no agricultural use zoning or Williamson Act contracts in the Project area, construction or operation of the Project would not cause conflicts with agricultural / open space zoning or contracts and there would be no impact.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
2.c. 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 forestland to non-forest use?	☐	☐	☐	☒

Discussion:

Because there is no farmland or forest land within the Project area, construction or operation of the Project would not involve changes that could result in conversion of such lands, and there would be no impact.

Conclusion:

There would be no impacts from the Project.

Would the project: 2.d. For lands within the Coastal Zone, convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?	Potentially Significant Impact ☐	Significant Unless Mitigated ☐	Less Than Significant Impact ☐	No Impact ☒

Discussion:

The Project area is not within the Coastal Zone; therefore, this threshold is not applicable to the Project.

Conclusion:

There would be no impacts from the Project.

Would the project: 2.e. Result in damage to soil capability or loss of agricultural land?	Potentially Significant Impact ☐	Significant Unless Mitigated ☐	Less Than Significant Impact ☐	No Impact ☒

Discussion:

Soils in the Project area are mapped as Urban Land (National Resources Conservation Service [SSURGO Database], 2016). “Urban land” consists of modified soils that have been cut and filled for development purposes. Because the entire Project area is paved and is not on agricultural land, the Project would not result in damage to soil capability or loss of agricultural land, and there would be no impact.

Conclusion:

There would be no impacts from the Project.

Sources:

National Resources Conservation Service, 2016. SSURGO Database (Google Earth Layer exported 2016). Available online at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627. Accessed on October 27, 2017.

Would the project: 2.f. 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))?	Potentially Significant Impact ☐	Significant Unless Mitigated ☐	Less Than Significant Impact ☐	No Impact ☒

Discussion:

Because there is no forest land or timberland within the Project area, construction or operation of the Project would not cause conflicts with, or rezoning of, such lands, and there would be no impact.

Conclusion:

There would be no impacts from the Project.

4.3. Air Quality

Environmental Setting:

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions within the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

The Project area is located within San Mateo County, under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD monitors air quality within Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties and portions of Solano and Sonoma Counties in the San Francisco Bay Area Air Basin (SFBAAB).

Local climatological effects, including wind speed and direction, temperature, inversion layers, and precipitation and fog, can exacerbate air quality problems in the SFBAAB. The climate of the SFBAAB is characterized by warm, dry summers and mild winters. San Mateo County frequently receives fresh marine air from the Pacific Ocean, which passes over the coastal hills.

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) as being of concern both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM). PM is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}) and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because the air quality standards for these air pollutants are regulated using human and environment health based criteria, they are commonly referred to as "criteria air pollutants."

Areas are classified under the Federal Clean Air Act and California Clean Air Act as attainment, non-attainment, or maintenance (previously non-attainment and currently attainment) for each criteria pollutant based on whether the federal, National Ambient Air Quality Standards (NAAQS), and state, California Air Quality Attainment Standards (CAAQS), air quality standards have been achieved. With respect to federal standards, the SFBAAB is designated nonattainment area for ozone and $PM_{2.5}$, and as an attainment or unclassified area for all other pollutants. With respect to the state standards, the SFBAAB is designated as a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$, and as an attainment area for all other pollutants. Thus, ozone and $PM_{2.5}$ are the major regional air pollutants of concern in the SFBAAB. However, in San Mateo County, ozone almost never exceeds health standards and $PM_{2.5}$ exceeds the national standard on about one day each year (BAAQMD 2017a).

In addition to criteria pollutants, EPA regulates hazardous air pollutants, also known as toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., long-duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. TACs can be separated into carcinogens and noncarcinogens based on the nature of the effects associated with exposure to the pollutant. The Clean Air Act identified 188 TACs. EPA has assessed this expansive list of toxics and identified a group of 21 TACs as Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products.

For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Any exposure to a carcinogen poses some risk of contracting cancer. Noncarcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Would the project: 3.a. Conflict with or obstruct implementation of the applicable air quality plan?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☐	☒

Discussion:

Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The primary purpose of an air quality plan is to bring an area that does not attain federal and state air quality standards into compliance with the requirements of the Federal Clean Air Act and California Clean Air Act requirements. The BAAQMD is responsible for developing and implementing air quality plans to address the State and federal ambient air quality standards in the SFBAAB. BAAQMD adopted the *2017 Clean Air Plan: Spare the Air, Cool the Climate* on April 19, 2017. This plan provides a regional strategy to attain state and federal air quality standards by reducing ozone, PM, and TACs (BAAQMD 2017a).

Air quality plans identify potential control measures and strategies, including rules and regulations that could be implemented to reduce air pollutant emissions from industrial facilities, commercial processes, on and off road motor vehicles, and other sources. BAAQMD implements these strategies through rules and regulations, grant and incentive programs, public education and outreach, and partnerships with other agencies and stakeholders.

Projects that are consistent with the assumptions used in development of the air quality plan are considered to not conflict with or obstruct the attainment of the air quality levels identified in the plan. Assumptions for emission estimates are based on population, employment, and land use projections taken from local and regional planning documents. The Project, which involves roadway modifications, utility improvements, and sanitary sewer replacement, would not affect any of these projections. Further, as discussed in more detail in Section 4.10, “Land Use and Land Use Planning”, the Project would be consistent with the goals of the County’s General Plan within the North Fair Oaks Community Plan Area by enhancing pedestrian and bicycle facilities. Policy 2A of the North Fair Oaks Community Plan seeks to “prioritize ‘complete streets’ design standards that give equal space to pedestrians, bicyclists, public transit, and cars” (County of San Mateo 2011). In addition, Policies 2B and 2C of the North Fair Oaks Community Plan, focus on modifying road standards and improving pedestrian facilities by including elements such as wider sidewalks, curb extensions, and street trees. Consistent with Policy 2F of the North Fair Oaks Community Plan, which specifically calls for evaluating the feasibility of implementing a lane reduction, or “road diet” for Middlefield Road, the Project would reduce the number of travel lanes and reallocate the width to provide bike lanes, widened sidewalks, crosswalk curb extensions, and other improvements. Thus, the Project would foster “complete streets” that balance auto, transit, pedestrian, and bicycle uses. In addition, the Project would be consistent with Transportation Control Measures: Bicycle Access and Facility Improvements and Pedestrian Access and Facility Improvements (TCM-D1; TCM-D2) included among the 2017 Clean Air Plan strategies to improve bicycle facilities and pedestrian access to transit, employment, and major activity centers. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan and there would be no impact

Conclusion:

There would be no impacts from the Project.

Sources:

Bay Area Air Quality Management District (BAAQMD). 2017a. Final 2017 Clean Air Plan: Spare the Air, Cool the Climate. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, accessed January 2018.

San Mateo County. 2011 (December). North Fair Oaks Community Plan. Chapter 7, Design Standards and Guidelines. Available: http://planning.smcgov.org/general-plan, accessed November 19, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
3.b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐

Discussion:

The BAAQMD CEQA Air Quality Guidelines may inform environmental review for development projects in the Bay Area, but do not commit local governments or the BAAQMD to any specific course of regulatory action. The BAAQMD CEQA Air Quality Guidelines are for informational purposes only and should be followed by local governments at their own discretion (BAAQMD 2017b). The thresholds for criteria pollutants recommended by BAAQMD are used for the analysis of Project-generated emissions.

Construction:

Construction of the Project would result in the temporary generation of reactive organic gases (ROG), nitrogen oxides (NO_X), PM_{10}, and $PM_{2.5}$ emissions from use of off-road construction equipment, on-road motor vehicles, soil excavation, and material transport. ROG and NO_X emissions are primarily associated with mobile equipment exhaust. Fugitive dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site.

Construction is anticipated to begin in Spring 2019 and would last approximately 12 to 18 months[3]. The analysis conservatively assumed construction of the utility joint trench, sewer replacement, and roadway improvements would occur simultaneously. Based on information from the County, as described earlier in Section 2.4, “Construction Schedule and Activities”, the typical construction crew would consist of approximately 30 workers. Approximately 11,000 cubic yards of material would be imported, and approximately 17,000 cubic yards of material would be exported during Project construction.

Construction-related emissions associated with typical construction activities were modeled using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod allows the user to enter project-specific construction information, such as types, number, and horsepower of construction equipment, and number and length of off-site motor vehicle trips. The total and average daily criteria pollutant construction emissions for the Project are presented in **Table 4.3-1**. Additional modeling assumptions and details are provided in Appendix B.

Table 4.3-1. Construction Emissions

Emissions Sources	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Total Emissions (tons)	0.30	3.44	0.14	0.13
Average Daily Emissions (lbs/day)[a]	2.29	26.06	1.07	1.00
Thresholds of Significance (lbs/day)[b]	54	54	82	54
Exceeds Thresholds?	No	No	No	No

Notes:
[a] Average daily emissions are calculated based on 22 working days per month over a 12-month construction period.
[b] Thresholds from Table 2-1 of the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017b).
ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns

As shown in **Table 4.3-1**, construction-generated emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust would not exceed applicable BAAQMD mass emission thresholds of significance. The BAAQMD does not have quantitative mass emissions thresholds for fugitive PM_{10} and $PM_{2.5}$ dust. Instead, the BAAQMD recommends that all projects, regardless of the level of average daily emissions, implement

[3] The air quality analysis assumed construction would begin in November 2018 and last approximately 12 months. Although project construction is anticipated to begin in Spring 2019 and take 12 to 18 months, the analysis for the proposed project is conservative as exhaust emissions from construction equipment are expected to decrease over time as stricter standards take effect, and as advancements in engine technology, retrofits, and turnover in equipment fleet are anticipated to result in lower levels of emissions over time.

applicable best management practices (BMPs), including those listed as Basic Construction Measures in the BAAQMD CEQA Guidelines (BAAQMD 2017b). The BMPs should be included in the Project's description or recommended as mitigation in a CEQA-compliant environmental document. Therefore, implementation of Mitigation Measure AQ-1 is required.

> ***Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures****. The County shall include the following measures in contractor specifications for the Project, and such measures shall be implemented during all phases of construction:*
>
> - *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered 2 times per day.*
> - *All haul trucks transporting soil, sand, or other loose material shall be covered.*
> - *All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.*
> - *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.*
> - *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads will be laid as soon as possible after grading, unless seeding or soil binders are used.*
> - *Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.*
> - *All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.*
> - *A publicly visible sign shall be posted at the Project construction site(s) with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number also shall be visibly posted, for compliance with applicable regulations.*

With implementation of Mitigation Measure AQ-1, construction impacts would be less than significant.

Operation:

The Project would have operational emissions associated with changes to the use of Middlefield Road by vehicular traffic. The proposed underground utilities and replacement sanitary sewer pipelines would not generate operational air emissions. The Project would not result in an increase in traffic volumes, and instead would decrease the average daily trips (ADT) within the Project area by diverting traffic and encouraging alternative transportation methods such as walking, bicycling, and use of transit (AECOM 2018). While the decrease in vehicle trips in the Project area would be anticipated to result in a reduction in criteria pollutant emissions, the Project would also result in changes to congestion and delay that could offset that reduction by increasing travel times and idling emissions.

As discussed in Section 4.16, "Transportation and Traffic," the proposed enhancements to the roadway would generally improve or maintain the same level of service (LOS) conditions in 2020 compared to the no-build conditions with the exception of one intersection (Middlefield Road and Fifth Avenue) for the 2020 build-out year. In the 2050 build-out year, the Project would also generally improve or maintain the LOS conditions compared to the no-build conditions for most intersections (only 6 of the 45 studied intersections would experience decreased LOS in 2050 as a result of the Project). As described in detail in Section 4.16, Mitigation Measures TRA-2 and TRA-3 would be necessary to improve traffic flow and LOS at those intersections where LOS would decrease. Mitigation Measure TRA-2 requires the County to modify signal timing/phase and turn-lane configuration at the Middlefield Road and Fifth Avenue intersection. Mitigation Measure TRA-3 requires the County to monitor the other five intersections to

determine when significant impacts would be triggered, and once triggered, to implement intersection improvements to reduce impacts to a less-than-significant level (refer Section 4.16).

Detailed traffic data, such as vehicle speeds, were not available to accurately estimate emissions. Therefore, the analysis qualitatively evaluated the change in vehicle trips and LOS associated with the Project. Since the additional delay at some intersections in 2020 and 2050 could result in increased emissions, the impact on operational emissions was conservatively assumed to be significant. With implementation of Mitigation Measures TRA-2 and TRA-3, LOS conditions would improve compared to the no-build scenario for those intersections. Better LOS conditions generally results in lower criteria air pollutant emissions associated with vehicle idling and subsequent accelerations from a full stop. Therefore, with the reduced vehicle trips in the Project area and implementation of Mitigation Measures TRA-2 and TRA-3, the Project would result in lower mobile source emissions compared to the existing and no build conditions and operation of the Project would not violate an ambient air quality standard or contribute substantially to an existing violation.

Conclusion:

With adherence to Mitigation Measure AQ-1, construction air quality impacts would be less than significant. With adherence to Mitigation Measures TRA-2 and TRA-3, operational air quality impacts would be less than significant.

Sources:

BAAQMD. 2017b. California Environmental Quality Act: Air Quality Guidelines. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed January 2018.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
3.c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐

Discussion:

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the BAAQMD, and this regional impact is cumulative rather than attributable to any one source. Per CEQA Guidelines Section 15064(h)(4), the existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the Project's incremental effects are cumulatively considerable.

The SFBAAB is currently designated as a nonattainment area for state and national ozone standards and national particulate matter ambient air quality standards. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project does not exceed the identified significance thresholds, its emissions would not be cumulatively considerable, resulting in less-than-significant air quality impacts on the region's existing air quality conditions.

Based on the Project-level analysis described above for Item 3.b, the Project's construction emissions would not exceed the thresholds of significance. In addition, with implementation of Mitigation Measures TRA-2 and TRA-3 (refer to Section 4.16, "Transportation and Traffic"), operational emissions would be expected to decrease compared to the existing and no build conditions. Therefore, construction emissions associated with the Project would not be cumulatively considerable, and cumulative construction impacts would be less than significant. For operational emissions, cumulative air quality impacts would be less than significant with mitigation.

Conclusion:

With adherence to Mitigation Measures TRA-2 and TRA-3, this cumulative impact would be less than significant.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
3.d. Expose sensitive receptors to substantial pollutant concentrations, as defined by BAAQMD?	☐	☐	☒	☐

Discussion:

According to BAAQMD, if a project is likely to be a place where people live, play, or convalesce or if sensitive individuals are likely to spend a significant amount of time there, it should be considered a receptor (BAAQMD 2017b). Sensitive individuals refer to those segments of the population most susceptible to poor air quality: children, the elderly, and those with pre-existing serious health problems affected by air quality. Examples of receptors include residences, schools and school yards, parks and play grounds, daycare centers, nursing homes, and medical facilities (ARB 2005). Sensitive receptors are located at various locations in the Project area, including single family residences approximately 160 feet east and west of Middlefield Road. Exposure to criteria pollutants is discussed under Item 3.b above; therefore, the discussion below focuses on exposure to TAC emissions.

Construction:

The greatest potential for TAC emissions during construction of the Project would be related to diesel PM emissions generated by heavy-duty construction equipment. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments that determine the health risks associated with exposure of residential receptors to TAC emissions should be based on a 30-year exposure period (OEHHA 2015). However, health risk assessments should be limited to the period/duration of emissions-generating activity. The duration for Project construction would approximately last 12 to 18 months and would cease following completion of the Project. Therefore, the total exposure period would be approximately 3 percent of the required exposure period for health risk assessments. In addition, trenching and paving along the roadway would largely be completed in segments along the existing road. Thus, emissions would occur intermittently throughout the construction period and would not occur as a constant plume of emissions from the Project area. Based on the anticipated construction schedule and the highly dispersive nature of diesel PM emissions, Project construction would not expose sensitive receptors to substantial TAC concentrations.

As a result, the construction air quality impact to sensitive receptors would be less than significant.

Operation:

The Project would have operational emissions associated with the change in use of Middlefield Road by vehicular traffic. The proposed underground utilities and replacement sanitary sewer pipelines would not generate operational air emissions.

EPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to a Federal Highway Administration analysis, even if vehicle miles traveled (VMT) increase by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in annual MSAT emissions is projected for the same time period (FHWA 2016).

The amount of MSATs emitted would be proportional to the VMT for the build and no build scenarios, assuming that other variables such as fleet mix are the same. Although VMT levels have not been estimated for the Project, average daily trips (ADT) in the Project area is projected to decrease under future conditions with the Project. In addition, the magnitude of the EPA-projected reductions in emissions is so great, even after accounting for average national annual VMT growth, that MSAT emissions in the study area are likely to decrease in the future. Thus, the operational air quality impacts would be less than significant.

Conclusion:

The impacts would be less than significant and no mitigation would be required.

Sources:

Bay Area Air Quality Management District (BAAQMD). 2017b. California Environmental Quality Act: Air Quality Guidelines. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed January 2018.

California Air Resources Board (ARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available at: https://www.arb.ca.gov/ch/handbook.pdf, accessed January 2018.

Federal Highway Administration (FHWA). 2016. Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Available at https://www.fhwa.dot.gov/environMent/air_quality/air_toxics/policy_and_guidance/msat/.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program. Available at http://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf, accessed January 2018.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
3.e. Create objectionable odors affecting a significant number of people?	☐	☐	☒	☐

Discussion:

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities that generate objectionable odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities.

Construction:

Construction activities associated with the Project could result in short-term odor emissions from diesel exhaust associated with construction equipment. The Project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature.

Operation:

Operation of the Project would not add any new odor sources. Operational activities would remain similar to existing conditions. Therefore, the Project would not create objectionable odors affecting a substantial number of people.

Conclusion:

The impacts would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
3.f. Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area?	☐	☒	☐	☐

Discussion:

As discussed in response to Item 3.b above, the Project would not exceed BAAQMD thresholds, thus would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. As discussed in response to Items 3.d and 3.e, the Project would not expose sensitive receptors to substantial pollutant concentrations or objectionable odors. Further, the Project is not anticipated to result in an increase in traffic volumes, and instead would decrease the traffic volumes and improve LOS conditions within the Project boundaries with implementation of Mitigation Measures TRA-2 and TRA-3 (refer Section 4.16, "Transportation and Traffic). Thus, the Project would not generate pollutants that would violate existing standards of air quality on-site or in the surrounding area.

Conclusion:

With adherence to Mitigation Measures TRA-2 and TRA-3, the Project impacts would be less than significant.

4.4. Biological Resources

Environmental Setting:

The Project area is urbanized, highly developed, and characterized by the busy, paved, four-lane Middlefield Road. The Middlefield Road ROW also includes angled parking spaces which serve the many small businesses and storefronts along this stretch of Middlefield Road. The Project area is almost entirely paved or covered by buildings that are directly adjacent to each other. Trees in the Project area are sparse, located in the few interstitial places that are not paved or covered by buildings. At the time of the biological survey in July 2017, one vacant lot on the southwest corner of Middlefield Road and Second Avenue was covered with overgrown weeds (but has since been converted to a surface parking lot). The surrounding areas and Project vicinity are also well developed. As a result, the Project area and vicinity does not contain habitat or wetland/water features that could support special-status species protected by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. The nearest undeveloped open space to the Project area are the salt ponds along the San Francisco Bay, approximately 1.1 miles to the north.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.a. Have a significant 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 Game of U.S. Fish and Wildlife Service?	☐	☒	☐	☐

Discussion:

Construction:

To determine if a special-status plant or wildlife species could occur in the Project area and therefore potentially be affected by Project activities, a query of the California Natural Diversity Database (CNDDB) was conducted and a field site assessment of biological resources was performed. The query of the CNDDB covered the Palo Alto 7.5 minute quadrangle in which the Project area is located, and the eight surrounding quadrangles (CDFW, 2017a; 2017b). A list of special-status species was compiled, and GIS tools were used to identify the location of special-status species occurrences and their distance from the Project area. The nearest occurrences of special status species are:

- within the bayland marsh areas approximately 1.1 miles north of the Project area,
- at San Francisquito Creek approximately 3 miles south of the Project area, and
- in the open areas of the foothills around I-280 approximately 2.8 miles southwest of the Project area.

The entire area within 1 mile of the Project area is urbanized and is not identified as containing occurrences of special status species. In addition to the database query, a reconnaissance-level biological survey of the Project area was conducted on July 26, 2017. The reconnaissance-level survey documented the physical and biological conditions in the Project area and the potential for the area to support habitat for special status species.

The Project area consists entirely of paved, developed, human-altered environments not conducive for providing habitat for special-status species. There are no tidal wetlands or marshes, creeks, wetlands, riparian areas, shrublands, forests, grasslands or other types of semi-natural area that could support habitat for other special-status species in the Project area. In addition, the surrounding areas are very urbanized and lack these habitats. Due to the absence of habitat in the Project area and surrounding areas and the absence of CNDDB occurrences in these areas, no special-status species (apart from nesting birds, addressed below) are likely to occur in the Project area.

Although there are no trees within the Project area itself, there are a small number of trees and structures on private property directly adjacent to the Project area that could provide nesting habitat for birds and raptors. The urbanized setting and continual presence of human disturbance would likely favor the presence of bird species commonly found in cities around the San Francisco Bay Area such as mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), and western scrub jay (*Aphelocoma californica*). These bird species are accustomed to searching for food sources and navigating the disturbances that are present in the urban environment. No special-status bird species or birds nest were observed at or near the Project area during the reconnaissance survey, and no CNDDB occurrences of special-status bird species were identified within 1 mile of the Project area; however, there were potential nesting trees for birds directly adjacent to the Project area. Disturbance of migratory birds during their nesting season could result in "take," which is prohibited under the federal Migratory Bird Treaty Act and Section 3513 of the California Fish and Game Code. Section 3503 of the Code also prohibits the take or destruction of nests or eggs of any bird, while Section 3503.5 provides additional protections for birds-of-prey.

If an active nest were to be directly affected by construction activities (e.g., if the tree containing the nest needed to be trimmed or removed), the nest, eggs, chicks or adults could be harmed and/or the nest could become abandoned. These impacts would constitute potentially significant impacts of the Project. Mitigation Measure BIO-1 is proposed to reduce impacts to nesting birds in the Project area and vicinity:

> ***Mitigation Measure BIO-1: Nesting Birds*** *Project construction activities, particularly any tree trimming or removal (if necessary), shall be timed to avoid the bird nesting season (February 1st through August 31st) when possible. If construction activities are scheduled during the nesting season, a qualified biologist shall conduct a preconstruction survey at least two weeks prior to commencement of construction activities to identify any potential nesting activity. If the survey indicates the presence of nesting birds, protective buffer zones shall be established around the nests. The size of the buffer zone shall be recommended by the biologist in consultation with the CDFW depending on the species of nesting bird and level of potential disturbance. The buffer zones shall remain in place until the young have fledged and are foraging independently. A qualified biologist shall monitor the nests closely until it is determined the nests are no longer active, at which time construction activities may commence within the buffer area.*

With implementation of Mitigation Measure BIO-1, impacts to nesting birds during construction would be reduced to less than significant.

Operation:

Street trees within the post-construction Project area would provide potential future nesting habitat, particularly for bird species that are accustomed to searching for food sources and navigating the disturbances that are present in the urban environment. No habitat for other special-status species would be created within the Project area as a result of the project. Ongoing use of the Project area by vehicular, bicycle, and pedestrian traffic would not be expected to result in the destruction of or other adverse effects to nests or nesting birds; therefore, operation of the Project would have no impacts on nesting birds or other special-status species.

Conclusion:

With adherence to Mitigation Measure BIO-1, the construction-related impacts would be less than significant. There would be no operational impacts.

Sources:

California Department of Fish and Wildlife (CDFW), Natural Diversity Database. 2017a. Query of California Natural Diversity Database for Palo Alto 7.5 minute quadrangle and surrounding eight quadrangles. July 2017.

California Department of Fish and Wildlife (CDFW), Natural Diversity Database. 2017b. Special Animals List. Period publication. 51pp.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.b. Have a significant 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 Game or US Fish and Wildlife Service?	☐	☐	☐	☒

Discussion:

The Project area was surveyed for sensitive natural communities, riparian areas, and potential jurisdictional wetlands during the reconnaissance survey on July 26, 2017. None of these sensitive biological communities and habitats were identified during the survey and, therefore, none would be affected by Project construction or operation.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.c. Have significant adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

Discussion:

The Project area was surveyed for protected wetlands as defined by Section 404 pf the Clean Water Act during the July 26, 2017 reconnaissance survey. No protected wetlands or any other Section 404 protected water feature was identified during the survey and therefore none would be affected by Project construction or operation.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.d. Interfere significantly with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeded the use of native wildlife nursery sites?	☐	☐	☐	☒

Discussion:

The Project area is characterized by paved, developed, human-altered environments where significant movement of native resident fish or wildlife species is not expected. No wildlife migratory corridors were observed during the July 26, 2017 reconnaissance survey, nor could any be observed from maps or aerial imagery. Wildlife species that occur in the urban environments such as raccoons (*Procyon lotor*),

opossums (*Didelphis virginiana*), and european starlings (*Sturnus vulgaris*) are species that are well adapted to moving through disturbed areas including those under construction. No movement corridors or migratory routes by fish or wildlife species are known in the Project area and therefore none would be affected by Project construction or operation.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?	☐	☐	☐	☒

Discussion:

During the site reconnaissance survey on July 26, 2017, three trees defined as “heritage trees” by the San Mateo County Heritage and Significant Tree Protection Ordinance were found adjacent to the sidewalk (outside of the County Right-of-Way) along the east side of Middlefield Road between First Avenue and Dumbarton Avenue. The trees are planted Oregon white oak trees, which are deciduous. The trees are not expected to be removed as part of this Project. However, if there is a need to remove one or more trees or if there is a need to trim the trees during construction, the contractor would be required to comply with relevant provisions of the San Mateo County Heritage and Significant Tree Protection Ordinance. There are no other local policies or ordinances protecting biological resources that affect this Project. Therefore, the Project would not conflict with any local policies or ordinances that affect biological resources.

Conclusion:

There would be no impacts from the Project.

Sources:

County of San Mateo Planning and Building Division. 1977. Ordinance No. 2427-Regulation of the Removal and Trimming of Heritage Trees on Public and Private Property. Accessed website at http://www.co.sanmateo.ca.us/vgn/images/portal/cit_609/43/15/390508720heritage%20tree%20ordinance.pdf.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.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?	☐	☐	☐	☒

Discussion:

Because the Project area and the surrounding vicinity is urbanized, there are no Habitat Conservation Plans or Natural Community Conservation Plans or other approved local, state or regional habitat conservation plan that apply to the Project area. Therefore, the Project would not conflict an approved habitat conservation plan.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.g. Be located inside or within 200 feet of a marine or wildlife reserve?	☐	☐	☐	☒

Discussion:

The Project area and surrounding vicinity is paved and urbanized. As a result, the Project area is not inside or within 200 feet of a marine or wildlife reserve.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.h. Result in loss of oak woodlands or other non-timber woodlands?	☐	☐	☐	☒

Discussion:

The Oak Woodlands Conservation Act defines oak woodlands as an oak stand with a greater than ten percent canopy cover or that may have historically supported greater than ten percent canopy cover. Although three oak trees are present in the Project area along Middlefield Road between First Avenue and Dumbarton Avenue, the oak trees appear to be planted (not native) and do not provide ten percent or greater canopy cover. No other oak trees were observed during the July 26, 2017 reconnaissance survey in the Project area. Therefore, no oak woodland stands are present in the Project area, and the Project would not result in loss of oak woodlands or other non-timber woodlands.

Conclusion:

There would be no impacts from the Project.

Sources:

California Fish and Game Code Sections 1360-1372, Article 3.5, Oak Woodlands Conservation Act. Accessed March 1, 2018: https://law.justia.com/codes/california/2005/fgc/1360-1372.html

4.5. Cultural Resources

Environmental Setting:

The Project area is in North Fair Oaks, an unincorporated community in San Mateo County. The Project vicinity is developed with a mix of retail, commercial, and industrial uses, including the UPRR right of way in the northern portion of the Project area. The Project area is on a gently sloping alluvial plain approximately 0.75 mile from the San Francisco Bay shore. As suggested by the name “Fair Oaks,” the vicinity of the Project area was historically oak woodland or oak savanna (Warmboe et al., n.d.:7).

People have resided in the San Francisco Bay Area for at least 10,000 years (Milliken et al., 2007:114). Ethnographic literature indicates that the Project area is in the traditional territory of the Ohlone, a linguistically-related group comprised of eight separate languages (Levy, 1978:485). Ramaytush Ohlone speakers resided in present day San Francisco and San Mateo Counties; the nearest tribelet to the Project area was the Lamchin.

The community of North Fair Oaks (originally Fair Oaks) was established in the 1850s, shortly after California’s annexation to the United States (MIG, 2011:10). Middlefield Road was in its current alignment by 1897 and the Dumbarton spur line of the UPRR in the Project area was built by 1910 (MIG, 2011:9; United States Geological Survey [USGS], 1897). North Fair Oaks saw two waves of development in the twentieth century: one following the 1906 earthquake in San Francisco, and the second just before and after World War II (MIG, 2011:10). The Project area is currently paved street and sidewalk sections on Middlefield Road between Douglas Avenue and Sixth Avenue, as well as short portions of the intersecting streets. Middlefield Road and intersecting streets are developed with a mix of one- and two-story buildings, primarily over 45 years of age.

Sources:

Levy, Richard. 1978. Costanoan. In California, edited by Robert F. Heizer, pp. 485-495. Handbook of the North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

MIG. 2011. Chapter 1: Introduction. San Mateo County North Fair Oaks Community Plan. Prepared by MIG in association with BKF Engineers, Kimley-Horn & Associates, Multicultural Institute, and Bay Area Economics. Available: http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/NFO_CH%201_Introduction_12-07-2011.pdf, accessed on October 19, 2017.

Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Cartier, and David A. Fredrickson. 2007. Punctuated Culture Change in the San Francisco Bay Area. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn Klar, pp. 99-123. AltaMira Press, Maryland.

United States Geological Survey [USGS]. 1897. *Palo Alto, Calif*. 15-minute topographic quadrangle. Available: http://historicalmaps.arcgis.com/usgs/, accessed on October 19, 2017.

Warmboe, Ryan, Joe LaClair, and Mike Schaller. n.d. Draft Past, Present, and Future Tree Canopy Conditions in San Mateo County. Prepared for the Tree Ordinance Steering Committee. County of San Mateo Planning and Building. Available: http://planning.smcgov.org/sites/planning.smcgov.org/files/Tree%20Canopy%20Report%20-%20Draft.pdf, accessed on October 19, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
5.a. Cause a significant adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☒	☐

Discussion:

Historical resources, as defined in § 15064.5 of the CEQA Guidelines, include resources listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR) (Pub. Res. Code §5024.1, Title 14 California Code of Regulations (CCR), Section 4850 et seq.). Historical resources include historic-period built environment resources, such as buildings, structures, and objects. Historical resources also include archaeological and tribal cultural resources, which are discussed in Items 5.b, 5.d, and 5.e, below.

A substantial adverse change in the significance of an historical resource that may constitute a potentially significant impact would include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (§ 15064.5(b)(1)).

Records Search and Literature Review

A records search was completed at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University on October 23, 2017 (NWIC File No. 17-1207). Site records and previous studies were accessed for the Project area and for a ¼-mile radius on the *Palo Alto, Calif.*, USGS 7.5-minute topographic quadrangle. The National Register of Historic Places (NRHP), the CRHR, the State Office of Historic Preservation Historic Properties (SOHP) directory data files, and historical maps were also reviewed (AECOM 2017). The Project area was slightly expanded following the completion of the records search to include the two blocks (approximately 250 feet) between MacArthur Avenue and Douglas Avenue. These areas were included in the ¼-mile radius search. No resources were identified within this expanded area.

The records search revealed that the entire Project area has been previously studied and that no built environment resources have been previously recorded within it. Nine cultural resources studies have been conducted in the Project area. No cultural resources were identified within the Project area by any of these studies.

Three studies have been completed and four built environment resources have been previously recorded within ¼ mile of the Project area: P-41-1541, the Garfield Charter School; P-41-2465, a culvert off Woodside Road; P-41-2493, a residence at 3270 Glendale Avenue; and P-41-2537, a commercial building at 101 Fifth Avenue. The culvert was not evaluated for CRHR eligibility, but was found ineligible for listing in the NRHP. The remaining three resources were found ineligible for listing in the CRHR.

The SOHP directory includes one previously recorded resource, 2600 Middlefield Road, within ¼ mile of the Project area (Property Number 171372). This resource was not evaluated for its CRHR eligibility, but it was found ineligible for listing in the NRHP.

One resource that crosses beneath the Project area has been found eligible for the NRHP and CRHR and is documented in the Historic American Engineering Record (HAER) on file at the Library of Congress (Ranzetta et al., n.d.). The Hetch Hetchy Bay Division Pipelines (BDPL) #1 and #2 cross beneath Middlefield Road just north of its intersection with First Avenue within the Project area. The pipelines are below the anticipated depth of ground disturbance for the proposed roadway modifications, utility undergrounding, and sanitary sewer replacement. BDPL #1 was constructed in 1923 and BDPL #2 was constructed in 1934 as part of the San Francisco Public Utilities Commission's Hetch Hetchy water system that conveys water from the Sierra Nevada to the City of San Francisco. The pipelines have been identified as a linear historic district.

No buildings were depicted adjacent to the Project area on the 1897 and 1899 *Palo Alto, Calif.* or 1902 *Santa Cruz, Calif.* U.S. Geological Survey (USGS) topographic quadrangles. By the publication of the 1943 *Palo Alto, Calif*. USGS topographic quadrangle, Middlefield Road had been developed and the Dumbarton spur line of the UPRR had been constructed. The grade crossing of the spur line at Middlefield Road has been subject to routine maintenance, modernization, and repair since construction.

Construction:

The NRHP- and CRHR-eligible Hetch Hetchy BDPL #1 and #2 traverse the Project area at a depth of approximately 6 feet, and are therefore not visible above ground. A permit from SFPUC is required to cross the Hetch Hetchy BDPL ROW. As part of the permit application, proposed clearances between the Project components and existing Hetch Hetchy BDPL pipelines were presented to SFPUC and accepted. To reduce the potential for conflict, the permit application proposes use of open trenching for installation of sanitary sewer lines and the utility joint trench in the vicinity of the BDPL pipelines. With adherence to permit conditions, the Project would not adversely impact these NRHP- and CRHR-eligible resources.

No historic-period buildings are in the Project area. Historic-period buildings directly adjacent to the Project area on Middlefield Road and intersecting streets would not be destroyed, demolished, or altered. The improvements proposed as part of this Project would include alterations to the existing road and sidewalks and planting of street trees. These modifications would not substantially alter the current viewshed in ways that would affect the potential CRHR-eligibility of historic-period buildings adjacent to the Project area.

Construction of the Project would not include any direct effects to any historical resources. Construction of the Project would have a less-than-significant indirect impact on resources within the viewshed.

Operation:

No historic-period buildings are in the Project area and operation of the Project, once constructed, would not include any direct effects to historic resources. Operation of the Project (i.e., implementation of street improvements) would not substantially alter the viewshed of the potential CRHR-eligibility of historic-period buildings adjacent to the Project area in a manner that would affect the setting, attributes, or integrity of these buildings. As such, Project operation would have a less-than-significant indirect impact on resources within the viewshed.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

AECOM. 2017. Northwest Info Center Records Search Results, Middlefield Road IS/MND. IC File No. 17-2017. Conducted October 23.

Ranzetta, Kirk, Leesa Gratreak, and Patience Stuart. n.d. Historic American Engineering Record: Bay Crossing Reach of the Bay Division Pipelines Nos. 1 and 2 (Hetch Hetchy Aqueduct) HAER No. CA-366. Documentation on file at the Library of Congress, Washington, D.C. Available online at: http://lcweb2.loc.gov/master/pnp/habshaer/ca/ca4100/ca4114/data/ca4114data.pdf, Accessed on October 27, 2017.

San Mateo County. 2011 (August). Draft Environmental Impact Report for Proposed North Fair Oaks Community Plan Update. Available: http://planning.smcgov.org/north-fair-oaks-community-plan, accessed on October 26, 2017.

United States Geological Survey [USGS]. 1897. *Palo Alto, Calif*. 30-minute topographic quadrangle. Available: http://historicalmaps.arcgis.com/usgs/, accessed on October 19, 2017.

United States Geological Survey [USGS]. 1897. Palo Alto, Calif. 15-minute topographic quadrangle. Available: http://historicalmaps.arcgis.com/usgs/, accessed on October 19, 2017.

United States Geological Survey [USGS]. 1899. Palo Alto, Calif. 15-minute topographic quadrangle. Available: http://historicalmaps.arcgis.com/usgs/, accessed on October 19, 2017.

United States Geological Survey [USGS]. 1902. Santa Cruz, Calif. 30-minute topographic quadrangle. Available: http://historicalmaps.arcgis.com/usgs/, accessed on October 19, 2017.

United States Geological Survey [USGS]. 1943. Palo Alto, Calif. 15-minute topographic quadrangle. Available: http://historicalmaps.arcgis.com/usgs/, accessed on October 19, 2017.

Would the project: 5.b. Cause a significant adverse change in the significance of an archaeological resource pursuant to § 15064.5?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☒	☐	☐

Discussion:

A significant impact would occur if the Project caused a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource. Ground disturbance for the Project would include excavation a maximum of 6 feet below grade for utility trench and sewer replacement, and 2.5 feet below grade for roadway reconstruction. Construction of bioretention basins and planting of street trees would not incur ground disturbance below 5 feet. These construction impacts would occur in currently paved areas. Shallow impacts associated with driving heavy equipment may occur in unpaved staging areas.

Soils in the Project area are mapped as Urban Land (National Resources Conservation Service [SSURGO Database], 2016). “Urban land” consists of modified soils that have been cut and filled for development purposes. Geologically, the Project area is situated on Holocene alluvial fan and basin deposits; the overlying surface soils have been modified by development (Brabb et al., 1998).

Records Search

The records search (NWIC File No. 17-1207) conducted for the Project revealed that no archaeological sites have been previously recorded in the Project area or within a ¼-mile radius. Nine studies have been conducted in the Project area. The entire Project area has been previously studied. No cultural resources were identified within the Project area in these studies; however, two prior cultural resources studies that included the Project area identified it as sensitive for buried archaeological resources because it is

situated on a Holocene landform (Kaptain, 2012; Whitaker et al., 2009).

Sacred Lands File Search

On October 20, 2017, AECOM requested a Sacred Lands File (SLF) search and Native American contact list for the Project area from the Native American Heritage Commission (NAHC). In a letter dated October 26, 2017, the NAHC responded that the SLF search was "negative… [h]owever, the absence of site specific information in the SLF does not preclude the presence of cultural resources in any Project area."

Survey

An archaeological survey of the Project area was not completed due to a lack of exposed ground surfaces available for inspection. The Project area consists of the currently paved street and sidewalk sections on Middlefield Road between Douglas Avenue and Fifth Avenue and small portions of the intersecting streets.

Construction:

No previously recorded archaeological resources are present within the Project area and the Project area has been modified by development. However, the potential for the accidental discovery of archaeological resources during construction of the Project cannot be discounted, especially if construction extends below imported fill and into intact Holocene soils. Impacts of Project construction relating to disturbance of archaeological resources may be potentially significant.

The County of San Mateo has determined in the North Fair Oaks Community Plan Update Final Environmental Impact Report (2011) that development in accordance with the Updated Community Plan could disrupt, alter, or eliminate as-yet undiscovered prehistoric or historic-period archaeological sites, potentially including Native American remains (Impact 8-1). The implementation of Mitigation Measure CUL-1 (Mitigation Measure 8-1(c) in the Updated Community Plan) would reduce this impact to less than significant.

> ***Mitigation Measure CUL-1: Treatment of Unanticipated Archaeological Discoveries:*** *If unanticipated prehistoric or historic-period archaeological resources are encountered during future construction within the Community Plan area, work shall be temporarily halted in the vicinity of the discovered materials and workers shall avoid altering the materials and their context until a qualified professional archaeologist has evaluated, recorded and determined appropriate treatment of the resource, in consultation with the County. Project personnel shall not collect cultural resources. Cultural resources shall be recorded on California Department of Parks and Recreation (DPR) 523 historic resource recordation forms. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies. If it is determined that the proposed development could damage a unique archaeological resource, mitigation shall be implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. This measure would reduce the potential impact on archaeological resources to a less-than-significant level.*

Project construction impacts on archaeological resources would be less than significant with the implementation of Mitigation Measure CUL-1.

Operation:

Operation of the Project, once constructed, would not require disturbance of additional areas outside of the construction footprint of the Project. As a result, Project operation would have no impact on archaeological resources.

Conclusion:

With adherence to Mitigation Measure CUL-1, the construction-related impacts of the Project would be less than significant. There would be no operational impacts.

Sources:

Brabb, E. E., R. W. Graymer, and D. L. Jones. 1998. Geology of the onshore part of San Mateo County, California: A digital database. U.S. Geological Survey Open-File Report 98-137. Available online at: https://pubs.usgs.gov/of/1998/of98-137/ Accessed on October 27, 2017.

Kaptain, Neal, 2012. Historical Resources Compliance Report for the San Mateo County Smart Corridors Project, Segment III. Prepared by LSA Associates, Inc., Point Richmond, California. Prepared for Caltrans District 4, Oakland, California. Report (S-39469) on file at the NWIC, Sonoma State University, Rohnert Park, California.

National Resources Conservation Service, 2016. SSURGO Database (Google Earth Layer exported 2016). Available online at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627. Accessed on October 27, 2017.

San Mateo County, 2011. North Fair Oaks Community Plan Update Final Environmental Impact Report.

Whitaker, Adrian, Phil Kaijankoski, and Jack Meyer, 2009. Archaeological Survey Report for the Dumbarton Rail Corridor Project, San Mateo and Alameda Counties, California. Prepared by Far Western Anthropological Research Group, Inc., Davis, California. Prepared for Parsons Corporation, San Francisco, California. Report (S-36481) on file at the NWIC, Sonoma State University, Rohnert Park, California.

Would the project: 5.c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☐	☒

Discussion:

Paleontological resource localities are those sites where the fossilized remains of extinct animals and/or plants have been preserved. Rock formations that are considered of paleontological sensitivity are those rock units that have yielded significant vertebrate or invertebrate fossil remains. These include, but are not limited to, sedimentary rock units that contain significant paleontological resources anywhere within its geographic extent.

The Project area is underlain by fine-grained Holocene basin deposits (Qhb) that were eroded from the surrounding hills (Brabb et al., 1998). Holocene deposits are considered too young to contain significant fossils. A records search at the University of California, Berkeley Museum of Paleontology's catalog did not identify any previously recorded fossil localities in the vicinity of the Project area and no specific paleontological resource sites have been recorded in the North Fair Oaks Community Plan area.

Construction:

No paleontological resources or unique geologic formations are present within the Project area. Because the Project area sits on Holocene alluvium and the Project ground-disturbing activities are shallow, Project construction would have no impact on paleontological resources.

Operation:

Operation of the Project, once constructed, would not require disturbance of additional areas outside of the construction footprint of the Project. Therefore, Project operation would have no impact on paleontological resources.

Conclusion:

There would be no impacts from the Project.

Sources:

Brabb, E. E., R. W. Graymer, and D. L. Jones. 1998. Geology of the onshore part of San Mateo County, California: A digital database. U.S. Geological Survey Open-File Report 98-137. Available online at: https://pubs.usgs.gov/of/1998/of98-137/ Accessed on October 27, 2017.

Would the project: 5.d. Disturb any human remains, including those interred outside of formal cemeteries?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☒	☐	☐

Discussion:

The Project area is situated in an urbanized area that was formerly a grassy alluvial plain, studded with oak groves and gently sloping to the sloughs and wetlands around San Francisco Bay. People have resided in the San Francisco Bay Area for at least 10,000 years (Milliken et al., 2007:114). Ethnographic literature indicates that the Project area is in the traditional territory of the Ohlone, a linguistically-related group comprised of eight separate languages (Levy, 1978:485). Ramaytush Ohlone speakers resided in present day San Francisco and San Mateo counties; the nearest tribelet to the Project area was the Lamchin.

Construction:

Archival research conducted at the NWIC indicated that the Project area does not contain any previously recorded Native American sites, prehistoric-period archaeological sites, burials, or human skeletal remains. However, the potential cannot be completely discounted that human remains may exist buried in the Project area. Construction of the Project could therefore potentially have a significant impact in relation to disturbance of human remains.

Implementation of Mitigation Measure CUL-2: Treatment of Human Remains would reduce this impact to less than significant.

> ***Mitigation Measure CUL-2: Treatment of Human Remains:*** *If human remains of Native American origin are discovered during construction of the Project, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC) (Public Resources Code Section 5097). If any human remains are discovered in any location in the Project area, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:*
>
> - *The San Mateo County coroner has been informed and has determined that no investigation of the cause of death is required; and*
> - *If the remains are of Native American origin:*
>   - *The descendants of the deceased Native Americans have made a recommendation regarding the disposition of remains and any associated grave goods, as provided in Public Resources Code Section 5097.98; or*
>   - *The NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified.*

Implementation of the Mitigation Measure CUL-2 would reduce the potential impact of construction activities on human remains to a less-than-significant level.

Operation:

Operation of the Project, once constructed, would not require disturbance of additional areas outside of the construction footprint of the Project. As a result, Project operation would have no impact on human remains.

Conclusion:

With adherence to Mitigation Measure CUL-2, the construction-related impacts would be less than significant. There would be no operational impacts.

Sources:

Levy, Richard. 1978. Costanoan. In California, edited by Robert F. Heizer, pp. 485-495. Handbook of the North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Cartier, and David A. Fredrickson. 2007. Punctuated Culture Change in the San Francisco Bay Area. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn Klar, pp. 99-123. AltaMira Press, Maryland.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
5.e. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of 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				
(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. 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:

Assembly Bill 52, approved in September 2014, and effective July 2015, establishes a formal consultation process for California Native American Tribes to identify potential significant impacts to tribal cultural resources, as defined by the CEQA statute (Public Resources Code Section 21074). Lead agencies must provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a project if the tribe has submitted written request to be notified. The tribe must respond to the lead agency within 30 days of the receipt of notification if it wishes to engage in consultation on the Project. The lead agency must begin the consultation process within 30 days of receiving the request for consultation.

No California Native American Tribes have requested consultation from the County. Therefore, the County is not completing consultation for the current Project.

Construction:

No tribal cultural resources that are listed or eligible for listing in the CRHR or local register of historical resources were identified during background research at the NWIC or in consultation with the NAHC. However, records maintained by the NWIC and NAHC are not exhaustive and negative results do not preclude the presence of tribal cultural resources in the Project area. The County has not determined any resources in the Project area to be significant pursuant to criteria set forth in subdivision (c) of Public

Resources Code Section 5024.1.

Impacts of Project construction relating to the disturbance of unknown tribal cultural resources may be potentially significant. The implementation of Mitigation Measure CUL-1: Treatment of Unanticipated Archaeological Discoveries (see Item 5.b, above) and Mitigation Measure CUL-2: Treatment of Human Remains (see Item 5.d, above) would reduce the impact to prehistoric archaeological sites that may be considered tribal cultural resources to less than significant. Given the highly developed and disturbed nature of the Project area, the potential for other non-archaeological tribal cultural resources is exceedingly low. Project construction would therefore have a less than significant impact on tribal resources, with implementation of Mitigation Measures CUL-1 and CUL-2.

Operation:

Operation of the Project, once constructed, would not require disturbance of additional areas outside of the construction footprint of the Project. As a result, Project operation would have no impact on tribal cultural resources.

Conclusion:

With adherence to Mitigation Measures CUL-1 and CUL-2, the construction-related impacts would be less than significant. There would be no operational impacts.

4.6. Geology, Soils, and Seismicity

Environmental Setting:

San Mateo County lies within a region of high seismic activity, with frequent medium earthquakes from nearby epicenters, as well as infrequent major earthquakes. The Peninsula portion of the San Andreas Fault poses the largest risk for San Mateo County, as it has a 21 percent chance of creating a magnitude 6.7 or greater earthquake in the next 30 years.

The Alquist-Priolo Earthquake Fault Zoning Act designates zones that are most prone to surface fault ruptures for the State of California. The zones are defined by the California Geological Survey (CGS). An active fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years). The Project area is not within an Alquist-Priolo earthquake fault zone.

The nearest active[4] faults to the Project area are the San Andreas and the Monte Vista Faults, which are oriented north-south and are approximately 4 miles to the west. Several Quaternary faults (more than 1.6 million years old) are inferred near the Project area, including the Stanford and Palo Alto faults. Although there is limited evidence for movement along these faults, because their ages overlap those of the major active faults in the region, they are considered potentially active. The Project area is within a liquefaction seismic hazard zone (CGS, 2006).

Geologically, the Project area is situated on Holocene alluvial fan and basin deposits; the overlying surface soils have been modified by development (Brabb et al., 1998). Soils in the Project area are mapped as Urban Land (National Resources Conservation Service [SSURGO Database], 2016). “Urban land” consists of modified soils that have been cut and filled for development purposes. Subgrade soils within the Project area likely consist of medium stiff lean clays within the upper 10 to 12 feet, underlain by medium dense to dense clayey sand and silty sand (AECOM 2017).

[4] An active fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 11,000 years).

Sources:

AECOM. 2017. Visual Pavement Condition Assessment, Middlefield Streetscape Improvements. Technical Memorandum. August 3.

Brabb, E. E., R. W. Graymer, and D. L. Jones. 1998. Geology of the onshore part of San Mateo County, California: A digital database. U.S. Geological Survey Open-File Report 98-137. Available online at: https://pubs.usgs.gov/of/1998/of98-137/ Accessed on October 27, 2017.

California Geological Survey (CGS), 2017. The Alquist-Priolo Earthquake Fault Zoning (AP) Act. Accessed October 27, 2017 at http://www.conservation.ca.gov/CGS/rghm/ap/.

California Geology Survey, 2015. Fault Activity Map of California (2010). Accessed October 27, 2017 at http://maps.conservation.ca.gov/cgs/fam/.

California Geological Survey, 2006. State of California Seismic Hazard Zones, Palo Alto Quadrangle Office Map, released October 18, 2006. Available online at http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/PALO_ALTO_EZRIM.pdf.

California Geological Survey, 1974. State of California Special Studies Zones, Palo Alto Quadrangle Official Map. Accessed October 27, 2017 at http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/PALO_ALTO_EZRIM.pdf.

California State Mining and Geology Board, 2014. Alquist-Priolo Earthquake Fault Zoning Act Regulations. Accessed October 27, 2017 at http://www.conservation.ca.gov/smgb/Misc/Documents/Regulations%20and%20Statutes/AP%20Regulations.pdf.

National Resources Conservation Service, 2016. SSURGO Database (Google Earth Layer exported 2016). Accessed October 27, 2017 at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
6.a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in: (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 significant evidence of a known fault?	☐	☐	☒	☐

Discussion:

The Project area is outside the Alquist-Priolo Earthquake Fault Zone and no known active faults are present within the Project area. However, the Quaternary-age Stanford and Palo Alto faults present a minor risk of fault rupture near the Project area. Given the distance of the Project area from the San Andreas and Monte Vista Faults, there is a low risk of surface rupture related to fault movement and the potential for the Project to exacerbate the risk of a rupture of a known fault is non-existent. Thus, the potential for construction or operation of the Project to expose people of structures to risk of loss, injury, or death due to fault rupture is less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

California Geological Survey, 2017. The Alquist-Priolo Earthquake Fault Zoning (AP) Act. Available online at http://www.conservation.ca.gov/CGS/rghm/ap/. Accessed October 23, 2017.

California Geology Survey, 2015. Fault Activity Map of California (2010). Available online at http://maps.conservation.ca.gov/cgs/fam/.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
6.a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in: (ii) Strong seismic ground shaking?	☐	☐	☒	☐

Discussion:

San Andreas and Monte Vista Faults are the nearest active faults to the Project area, approximately 4 miles to the west. Given the distance to these faults from the Project area, ground shaking is possible during a strong earthquake. The intensity of the shaking in the Project area depends on the characteristics of the generating fault, distance to the earthquake epicenter, magnitude, duration of the earthquake, and specific site geologic conditions. According to the Association of Bay Area Governments (ABAG) Earthquake Shaking Scenario Map, which predicts the potential for ground shaking during major earthquakes on the active faults in the Bay Area, the Project is in an area with a high earthquake shaking potential. While complete avoidance of any damage may not be feasible, the Project does not include structures for human occupancy. Additionally, the Project would improve existing road and sidewalk conditions and would be constructed according to County design standards. The Project would not exacerbate the potential for seismic ground shaking, which is a function of the location of the epicenter, the size of the event, and the underlying geological formations, none of which would be affected by the Project. Therefore, construction or operation of the Project are not expected to increase the exposure of humans or structures to strong seismic ground shaking that would result in risk of loss, injury, or death.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

Association of Bay Area Governments (ABAG), no date. Resilience Program Earthquake Shaking Scenarios [map], Available online at http://gis.abag.ca.gov/website/Hazards/?hlyr=northSanAndreas&co=6081quake.abag.ca.gov/shaking/.

California Geology Survey, 2015. Fault Activity Map of California (2010). Available online at http://maps.conservation.ca.gov/cgs/fam/.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
6.a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in: (iii) Seismic-related ground failure, including liquefaction and differential settling?	☐	☐	☒	☐

Discussion:

Seismic shaking could result in secondary ground failure caused by liquefaction or differential settlement. Liquefaction occurs when vibrations or water pressure cause soil particles to spread apart and lose contact with each other. When the soils temporarily lose strength, they behave as a liquid rather than a solid, resulting in their inability to support the weight of a structure above. Saturated soils that are loose, granular sediment or fill are more susceptible to liquefaction. Differential settlement occurs when the soil beneath a structure expands, contracts or shifts away, causing the foundation of the structure to settle unequally, and often resulting in structural damage.

The Project would be located in an area that has moderate liquefaction susceptibility (ABAG, no date). Groundwater levels at wells in the vicinity of the Project area are approximately 15 to 20 feet below ground surface (SWRCB 2017), which is deeper than the maximum depth of disturbance for the Project.

The Project is not expected to cause loss, death or injury from liquefaction, as the Project would improve the existing road, drainage features, and utilities and would not include any new buildings or other vertical structures that would be subject to major structural damage or create a public health hazard as a result of liquefaction or differential settlement. Construction and operation of the Project would not exacerbate the potential for liquefaction or other seismic-related ground failure, which is a function of the location of the epicenter, the size of the event, and the underlying soils. Site preparation for the Project would include compaction standards for the road bed, which would reduce the likelihood or potential severity of damage from liquefaction or differential settlement. While complete avoidance of any damage may not be feasible, adherence to County design standards would reduce potential impacts from liquefaction to less-than-significant levels. Therefore, the Project is not expected to increase the exposure of humans or structures to seismic-related ground failure, such as liquefaction, that would result in loss, injury, or death.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

Association of Bay Area Governments (ABAG), no date. Resilience Program Other Earthquake [map], Available online at http://gis.abag.ca.gov/website/Hazards/?hlyr=liqSusceptibility.

State Water Resources Control Board (SWRCB). 2017. Geotracker Database “Cortese” list of LUST sites on SWRCB’s Geotracker database. Available online at http://geotracker.waterboards.ca.gov/profile_report?global_id=T0608100028&mytab=esidata#esidata. Accessed December 5, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
6.a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in: (iv) Landslides?	☐	☐	☐	☒

Discussion:

Project improvements would be made on a generally flat area with little to no slopes, which has experienced few, if any, landslides. Additionally, the Project area is not in an Earthquake-Induced Landslide Zone Area where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements. Therefore, construction or operation of the Project is not expected to increase the exposure of humans or structures to landslides that would result in risk of loss, injury, or death.

Conclusion:

There would be no impacts from the Project.

Sources:

Association of Bay Area Governments (ABAG), no date. Resilience Program Earthquake Induced Landslide Study Zones [map], Available online http://gis.abag.ca.gov/website/Hazards/?hlyr=liqSusceptibility.

California Geological Survey, 2006. State of California Seismic Hazard Zones, Palo Alto Quadrangle Office Map, released October 18, 2006. Available online at http://gmw.conservation.ca.gov/SHP/EZRIM/Maps/PALO_ALTO_EZRIM.pdf.

Would the project: 6.a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in: (v). Coastal cliff/bluff instability or erosion? *Note to reader: This question is looking at instability* under *current conditions. Future, potential instability is looked at in Section 4.7 (Climate Change).*	Potentially Significant Impact ☐	Significant Unless Mitigated ☐	Less Than Significant Impact ☐	No Impact ☒

Discussion:

The Project area is not on or near the coastline. Therefore, the Project would not expose humans or structures to hazards related to coastal cliff/bluff instability or erosion.

Conclusion:

There would be no impacts from the Project.

Would the project: 6.b. Result in significant soil erosion or the loss of topsoil?	Potentially Significant Impact ☐	Significant Unless Mitigated ☐	Less Than Significant Impact ☒	No Impact ☐

Discussion:

Construction:

The Project area is flat or gently sloping with soils that have only slight to moderate susceptibility to erosion by water and wind. Nevertheless, construction activities such as utility trenching, removing of existing pavement, grading, drilling, leveling, smoothing and soil recompaction could disturb soils underneath pavement by temporarily exposing them to the erosive forces of wind, rain, and stormwater runoff, particularly if construction occurs during periods of prolonged heavy rainfall.

Because disturbed areas within the Project area would be greater than one acre, the Project would obtain coverage under the SWRCB's Construction General Permit. As part of the Construction General Permit, the contractor would prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMPs) which would minimize wind- and water-related erosion at the construction site, as discussed in more detail in Section 4.9, "Hydrology and Water Quality." BMPs designed to reduce erosion of exposed soil may include, but are not limited to, soil stabilization controls, watering for dust control, and sediment basins. Implementation of the SWPPP and BMPs for erosion control would mean that impacts from soil erosion would be less than significant.

Operation:

Project operation would not involve exposure of soils, as the Project area would be almost fully paved, except for street tree wells and bioretention facilities, which would be designed to minimize erosion potential. Therefore, operation of the Project would not be expected to result in soil erosion or loss of top soil, and the impacts would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project: 6.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, severe erosion, liquefaction or collapse?	Potentially Significant Impact ☐	Significant Unless Mitigated ☐	Less Than Significant Impact ☒	No Impact ☐

Discussion:

The Project area is entirely paved, within an existing public ROW. The Project would upgrade existing roadway features and utilities but would not be adding structures that would be susceptible to damage or put humans in risk from lateral spreading, subsidence, severe erosion or collapse, or would cause the soil to be unstable. The potential for seismic-related ground failure due to landslides would be low, as described in Item 6a.iv. While the Project would be located in an area that has moderate liquefaction susceptibility, the Project would be designed in accordance with County standards to minimize road, sidewalk, and utility failure related to liquefaction from seismic activity, as described in Item 6a.iii. Therefore, construction or operation of the Project is not expected to result in or exacerbate landslide, lateral spreading, subsidence, severe erosion, liquefaction, or collapse.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
6.d. Be located on expansive soil, as noted in the 2010 California Building Code, creating significant risks to life or property?	☐	☐	☒	☐

Discussion:

Expansive soils owe their characteristics to the presence of swelling clay minerals. When such soils get wet, the clay minerals absorb water molecules causing the soil to expand; conversely, as they dry out, they shrink. Construction on expansive soils could result in damage to buildings, roads, sidewalks, foundations, underground utilities, basements and other structures. Soils in the Project area are anticipated to consist of medium stiff lean clays within the upper 10 to 12 feet, underlain by medium dense to dense clayey sand and silty sand. Project improvements would be designed to withstand the effects of shrink-swell in accordance with County standards to prevent road, sidewalk, and utility failure related to expansive soils. Site preparation for the Project would include compaction/fill standards for the road bed, which would reduce the likelihood or potential severity of damage from expansive soils. Thus, the Project is not expected to create significant risks to life or property related to expansive soils.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required**.**

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
6.e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion:

The Project is not proposing any construction of septic tanks or alternative wastewater disposal systems. Thus, soils would not be required to support wastewater disposal systems and this threshold would not be applicable.

Conclusion:

There would be no impacts from the Project.

4.7. Climate Change/Greenhouse Gas Emissions

Environmental Setting:

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A portion of the solar radiation that enters earth's atmosphere is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation is absorbed by GHGs; as a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth.

GHGs are present in the atmosphere naturally, are released by natural sources and anthropogenic (i.e., human-generated) sources, and are formed from secondary reactions taking place in the atmosphere. The following are GHGs that are widely accepted as the principal contributors to human-induced global climate change that are relevant to the Project:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)

Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4 is the main component of natural gas and is associated with agricultural practices and landfills. N_2O is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere ("atmospheric lifetime"). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 28, and N_2O, which has a GWP of 265 (IPCC 2013). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 may still contribute to climate change, because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). The concept of CO_2-equivalents (CO_2e) is used to account for the different GWP potentials of GHGs to absorb infrared radiation.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
1. 7.a. Generate greenhouse gas emissions (including methane), either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐

Discussion:

Construction:

Off-road equipment, materials transport, and worker commutes during construction of the Project would generate GHG emissions. Total Project construction emissions were estimated using the methodology discussed earlier under Section 4.3, "Air Quality." As shown in **Table 4.7-1**, the total estimated construction-related emissions would be approximately 523 MT CO_2e with the maximum emissions of 403 MT CO_2e in 2019. Additional modeling assumptions and details are provided in Appendix B.

Table 4.7-1. Construction-Related Greenhouse Gas Emissions[5]

Year	GHG Emissions ($MT CO_2e$)
2018	120
2019	403
Total Construction Emissions	523
Amortized Emissions	17
Notes: MT= metric tons; CO_2e = carbon dioxide equivalents Detailed modeling outputs provided in Appendix B.	

The BAAQMD has not adopted thresholds for evaluating GHG emissions from construction activities. However, BAAQMD recommends that the Lead Agency quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction-generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals (BAAQMD 2017b).

Direct comparison of construction GHG emissions with long-term thresholds would not be appropriate because these emissions cease upon completion of construction. Other districts (e.g., South Coast Air Quality Management District; San Luis Obispo County Air Pollution Control District) recommend that GHG emissions from construction activities be amortized over a project's operational lifetime (typically assumed to be 30 years) for comparison with long-term GHG emissions significance thresholds. For comparison to the BAAQMD operational GHG threshold, construction emissions were amortized over the estimated lifetime of the Project. As shown in Table 4.7-1, the amortized construction emissions for the Project were estimated at 17 MT CO_2e per year (523 MT CO_2e divided by 30 years).

Thus, annual Project GHG emissions would not exceed the BAAQMD threshold of 1,100 MT CO_2e per year. Therefore, construction of the Project would not generate GHG emissions that may have a significant impact on the environment.

Operation:

The Project would have operational GHG emissions associated with the change in use of Middlefield Road by vehicular traffic. The proposed underground utilities and replacement sanitary sewer pipelines would not generate operational GHG emissions.

The Project would not result in an overall increase in traffic volumes, and instead would decrease the average daily trips (ADT) within the Project boundaries by diverting traffic and encouraging alternative transportation methods such as walking, bicycling, and use of transit. While the decrease in vehicle trips in the Project area would be anticipated to result in a reduction in GHG emissions, the Project would also result in changes to congestion and delay that could offset that reduction by increasing travel times and idling emissions.

Detailed traffic data, such as vehicle speeds, were not available to accurately estimate emissions. Therefore, the analysis qualitatively evaluated the change in vehicle trips and LOS associated with the proposed project. Better LOS conditions generally results in lower criteria air pollutant emissions associated with vehicle idling and subsequent accelerations from a full stop. As discussed in Section 4.16, "Transportation and Traffic," the proposed enhancements to the roadway would generally improve or maintain the same level of service (LOS) conditions in 2020 compared to the no-build conditions with the exception of one intersection (Middlefield Road and Fifth Avenue) for the 2020 build-out year. In the 2050 build-out year, the Project would also generally improve or maintain the LOS conditions compared

[5] The GHG emissions analysis assumed construction would begin in November 2018 and last approximately 12 months. Although project construction is anticipated to begin in Spring 2019 and take 12 to 18 months, the analysis for the proposed project is conservative as exhaust emissions from construction equipment are expected to decrease over time as stricter standards take effect, and as advancements in engine technology, retrofits, and turnover in equipment fleet are anticipated to result in lower levels of emissions over time.

to the no-build conditions for most intersections (only 6 of the 45 studied intersections would experience decreased LOS in 2050 as a result of the Project). As detailed in Section 4.16, Mitigation Measures TRA-2 and TRA-3 would be necessary to improve traffic flow and LOS at those intersections where LOS would decrease. Mitigation Measure TRA-2 requires the County to modify signal timing/phasing and turn-lane configuration at the Middlefield Road and Fifth Avenue intersection; while Mitigation Measure TRA-3 requires the County to monitor the other five intersections to determine when significant impacts would be triggered, and once triggered, to implement intersection improvements to reduce impacts to a less-than-significant level (refer Section 4.16).

Since the additional delay at some intersections in 2020 and 2050 could result in increased emissions, the impact on operational emissions was conservatively assumed to be significant. With implementation of Mitigation Measures TRA-2 and TRA-3, LOS conditions would improve compared to the no-build scenario for those intersections, therefore lower criteria air pollutant emissions associated with vehicle idling and subsequent accelerations would be expected. Therefore, with the reduced vehicle trips in the Project area and implementation of Mitigation Measures TRA-2 and TRA-3, the Project would result in lower mobile source emissions compared to the existing and no build conditions.

Conclusion:

The construction-related impacts would be less than significant and no mitigation would be required. With adherence to Mitigation Measures TRA-2 and TRA-3, the operational impacts would be less than significant.

Sources:

BAAQMD. 2017b. California Environmental Quality Act: Air Quality Guidelines. Available: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en, accessed January 2018.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.b. Conflict with an applicable plan (including a local climate action plan), policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion:

AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. It requires that statewide GHG emissions be reduced to 1990 levels by 2020. In December 2008, ARB adopted its Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (ARB 2014).

In 2008 and 2014, ARB approved the Scoping Plan and the first update to the Climate Change Scoping Plan: Building on the Framework, respectively (ARB 2008, ARB 2014). In 2016, the state legislature passed Senate Bill SB 32, which established a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In response to SB 32 and the companion legislation of AB 197, ARB adopted California's 2017 Scoping Plan in November 2017. The 2017 Scoping Plan draws from the previous plans to present strategies to reaching California's 2030 GHG reduction target. None of these statewide plans or policies constitutes a regulation to adopt or implement a regional or local plan for reduction or mitigation of GHG emissions. In addition, it is assumed that any requirements formulated under the mandate of AB 32 and SB 32 would be implemented consistent with statewide policies and laws.

In 2012, San Mateo County adopted the Government Operations Climate Action Plan, which details strategies that can be used to reduce GHG emissions in the sectors of energy, transportation, and solid waste, including replacement of conventional street lights and traffic signals with more energy efficient LED technology (County of San Mateo 2012).

In 2013, San Mateo County adopted the Community Climate Action Plan, also known as the Energy Efficiency Climate Action Plan (EECAP), to demonstrate the County's continued commitment to reduce

GHG emissions and streamline future environmental review of development projects in San Mateo County (County of San Mateo 2013). Strategies in the EECAP build on the County's innovative work to date, serving to protect natural systems, reduce waste, improve the energy efficiency of buildings, and ensure long-term access to reliable, clean, and affordable energy. The County's Office of Sustainability is currently working with the Planning and Building Department to update the existing Community Climate Action Plan. The EECAP includes a Development Checklist designed to ensure compliance with the EECAP and streamline project review.

The Project would be consistent with the following measures of the EECAP Development Checklist:

- Measure 5.3: Pedestrian Design: Incorporate pedestrian design elements to enhance walkability and connectivity, while balancing impacts on vehicle congestion;
- Measure 6.2: Traffic Calming in New Construction: Incorporate appropriate traffic calming features, such as marked crosswalks, countdown signal timers, planter strips with street trees, and curb extensions.
- Measure 15.1: Construction Idling: Construction equipment for new development to comply with best management practices from BAAQMD guidance.

As mentioned above, the Project would not exceed emission thresholds adopted by the BAAQMD and would be consistent with the goals and strategies of the County of San Mateo EECAP and Development Checklist. Therefore, the Project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

California Air Resources Board (ARB). 2008. *Climate Change Scoping Plan*. Available: www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm. Accessed February 2018.

———. 2014. *First Update to the Climate Change Scoping Plan: Building on the Framework. Pursuant to AB 32, the California Global Warming Solutions Act of 2006*. Available: https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed February 2018.

———. 2017. *Final Proposed 2017 Scoping Plan Update: The Strategy for Achieving California's 2030 GHG Target*. Available: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed February 2018.

County of San Mateo. 2012. *Government Operations Climate Action Plan.* Available: http://www.smcsustainability.org/download/climate-change/Government-Ops-Climate-Action-Plan.pdf. Accessed June 2018.

_____. 2013. *Energy Efficiency Climate Action Plan*. Available: http://www.smcsustainability.org/download/climate-change/Energy-Efficiency-Climate-Action-Plan.pdf. Accessed February 2018.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.c. Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?	☐	☐	☐	☒

Discussion:

The Project area does not contain forestland; therefore, Project construction and operation would not involve the loss or conversion of forestland.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.d. Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?	☐	☐	☐	☒

Discussion:

The Project area is more than one mile from San Francisco Bay and is not on or near coastal cliffs or bluffs; therefore, the Project would have no effect on coastal erosion.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.e. Expose people or structures to a significant risk of loss, injury or death involving sea level rise?	☐	☐	☐	☒

Discussion:

Sea-level rise would not have a direct effect on the Project area because the Project area is sufficiently inland (more than one mile from the Bay) and has relatively high ground elevations (24 to 35 feet). Regional sea level rise maps do not identify the Project area as being at risk from inundation or shoreline overtopping (Adapting to Rising Tides 2017). The Project would not affect levees, sea walls, or other features that prevent sea water intrusion into urban areas. Therefore, this threshold is not applicable to the Project.

Conclusion:

There would be no impacts from the Project.

Sources:

Adapting to Rising Tides. 2017 (April). Regional Sea Level Rise Maps for San Mateo County. Available online at http://www.adaptingtorisingtides.org/wp-content/uploads/2016/08/SanMateoCoARTSLRMaps2017WEB.pdf Accessed February 28, 2018.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.f. Place structures within an anticipated 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

Discussion:

The Project area is not located within a 100-year flood-hazard area as mapped on a federal flood hazard boundary, flood insurance rate map, or other flood hazard delineation map (FEMA 2012), and the Project would not involve the installation of new structures, apart from street furniture and lighting. Further, the Project would incorporate stormwater bioretention facilities that could reduce the magnitude of and delay the timing of peak runoff from the Project area attenuating flooding issues in downgradient areas (refer Section 4.9, “Hydrology and Water Quality” for more detail). Therefore, there would be no impacts from the Project due to placing structures within 100-year flood-hazard areas mapped on a federal flood hazard boundary, flood insurance rate map, or other flood hazard delineation map.

Conclusion:

There would be no impacts from the Project.

Sources:

Federal Emergency Management Agency (FEMA). 2012. Flood Insurance Rate Map, San Mateo County, California, Map No. 06081C0302E. October 16.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.g. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒

Discussion:

See discussion under Item 7.f above.

Conclusion:

There would be no impacts from the Project.

Sources:

Federal Emergency Management Agency (FEMA). 2012. Flood Insurance Rate Map, San Mateo County, California, Map No. 06081C0302E. October 16.

4.8. Hazards and Hazardous Materials

Environmental Setting:

The North Fair Oaks area contains several industrial and commercial facilities that use, store, or dispose of hazardous materials. Some of these sites are known to have had hazardous materials releases, which have resulted in soil and/or groundwater contamination (EDR 2017).

The site is within an urban environment, and is identified as a “Non-Very High Fire Hazard Severity Zone” on the Local Responsibility Area CalFIRE map for San Mateo County (CalFIRE 2008). However, the ABAG Resilience Program identifies the southern portion of the Project area (south of Fourth Avenue) as being within the wildland-urban interface (ABAG 2017).

The Project area is not subject to an airport land use plan; the nearest airport is approximately 3 miles to the southeast.

Sources:

Association of Bay Area Governments (ABAG). 2017. Resilience Program Wildland-Urban Interface Map, Available online at http://gis.abag.ca.gov/website/Hazards/?hlyr=wildfireThreat. Accessed October 28, 2017.

Environmental Data Resources (EDR). 2017. EDR Radius Map™ Report with Geocheck®. Inquiry Number 5140591: Middlefield Road, Redwood City. December 19.

California Department of Forestry and Fire Protection (CalFIRE). 2008. Very High Fire Hazard Severity Zones in Local Responsibility Area, as recommended by CalFIRE. November 24.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐

Discussion:

Construction:

Construction of the Project would involve the routine transport, storage, and disposal of limited quantities of hazardous materials typically used during construction, including paints, solvents, adhesives, fuel, lubricants, grease, and asphalt. These materials could be inadvertently spilled or released into the environment, which could be a potentially significant impact. Use of hazardous chemicals and substances during construction would be subject to federal, state, and local health and safety requirements.

As discussed further in Section 4.9, "Hydrology and Water Quality," the Project would be required to obtain coverage under the State Water Resource Control Board's Construction General Permit. As part of the Construction General Permit, the contractor would be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) which would include best management practices to prevent accidental spills of hazardous materials during construction. Such BMPs would include:

- following manufacturer's recommendation on the use, storage and disposal of chemical products;
- maintaining vehicles and construction equipment in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials;
- providing secondary containment for any hazardous materials temporarily stored onsite;
- properly disposing of discarded containers of fuels and other chemicals; and
- staging of construction equipment and equipment washing shall occur only in designated locations where spills or washing water cannot flow into drainage channels.

With adherence to applicable federal, State and local regulations, and implementation of BMPs in the Project SWPPP, the impact to the public or environment from use or accidental release of a hazardous material during construction would be less than significant.

No structures containing hazardous building materials (e.g., lead-based paint, asbestos-containing materials) would be demolished or disturbed as part of the Project, and the area is not located in an area that contains naturally-occurring asbestos (Department of Conservation, 2010).

The history of industrial uses in the vicinity of the Project area, and in particular on sites adjoining the Project area may also have resulted in soil and/or groundwater contamination within the Project area. There are several Leaking Underground Storage Tank (LUST) sites adjacent to or in the vicinity of the Project area, including the following:

- Tilton Properties at 2655 Middlefield Road, to the east of Middlefield Road between Hurlingame and MacArthur Avenues.
- Beals and Martin Associates facility at 2682 Middlefield Road, adjacent to the Middlefield Road/UPRR Railroad Crossing.
- Figueras Property at 3157 Middlefield Road, on the northeast corner of the Fifth Avenue intersection.
- Zohrab's Garage at 3233 Middlefield Road, on the southeastern corner of the Sixth Avenue intersection.

These sites are listed as "Case Closed" (SWRCB, 2015), which indicates that a closure letter or other formal closure decision document has been issued for the site. However, given that these sites are directly adjacent to the Project area, there is potential that residual contamination at these sites could affect soils or groundwater in the Project area.

There are also several other Cortese List facilities within a half mile of the Project area, although the majority of these sites are "case closed" and are assumed to have been remediated to an extent that residual contamination would not extend as far as the Project area. The two closest "open" cases on the Cortese List are the following:

- ARCO #306 service station at 1700 Middlefield Road, Redwood City, approximately 0.5 mile north of the Project area, at the intersection of Middlefield Road and Chestnut Avenue. This facility is listed on the LUST database with a cleanup status of "Open – Site Assessment" which indicates that site characterization, investigation, risk evaluation, and/or site conceptual model development are occurring at the site (SWRCB, 2015). Excavation of contaminated soils occurred at this site in 1991; however, recent reports indicate that gasoline range organics remain in both soil and groundwater at the site, and extend across the property boundary into the Middlefield Road ROW to the north of the Project area. Site documentation indicates that current soil and groundwater contamination associated with this facility does not extend south of Pine Street, and that groundwater flows northward, away from the Project area. As such, this Cortese List facility is unlikely to have impacted soil or groundwater within the Project area.
- A-1 Gas/Fifth Avenue service station at 795 Fifth Avenue, Redwood City. This facility is a LUST site approximately 0.6 mile east of the Project area, at the intersection of Fifth Avenue and Spring Street, and has a cleanup status of "Open – Eligible for Closure," which indicates that corrective action at the site has been determined to be completed and any remaining petroleum constituents from the release are considered to be low threat to human health, safety, and the environment. In any case, groundwater flow at this site is northwards, away from Middlefield Road; therefore, this Cortese List facility is unlikely to have impacted soil or groundwater within the Project area.

While the LUST sites directly abutting the Project area have a status of "case closed," there is some potential that residual contamination exists within the Project area near these sites, and there is also potential that contamination may exist in the Project area from unknown sources (such as unreported spills at adjacent industrial facilities). In addition, soil and/or groundwater within railroad ROWs are often contaminated with heavy metals such as lead or arsenic, pesticides, or volatile organic compounds, due to the historical use of chemically-treated railroad ties and historical spills or use of chemicals during maintenance and/or operations of the railroad.

If contamination is present within the Project area, then ground-disturbing activities during construction, such as utility trenching, removal of existing pavement, grading, leveling and smoothing could potentially expose construction workers and the public to hazardous conditions, through disturbance, transportation, or disposal of contaminated soils or groundwater. Grading activities could also result in accidental mobilization of contaminants from the soil to groundwater or air. Depending on the concentration of any contaminants, if present, excess soils generated during construction may require transportation and disposal as a hazardous waste. Impacts relating to disturbance of potentially contaminated soils and/or groundwater would be potentially significant.

Implementation of Mitigation Measure HAZ-1 would reduce these potential impacts by requiring further investigation to determine the presence and extent of contamination within the Project area and setting out protocols to be implemented if such contamination is confirmed within the Project area. Implementation of Mitigation Measure HAZ-2 would further reduce the potential impacts by requiring the construction contractor to implement appropriate health and safety procedures, and protocols for unanticipated discovery of contaminated soils or groundwater during construction.

> ***Mitigation Measure HAZ-1: Environmental Site Investigation.*** *Prior to the issuance of a grading permit and before any substantial ground disturbance within the areas specified below, the County shall hire a qualified environmental professional to conduct a Phase II environmental site investigation to determine the potential presence of metals and organic compounds in soil and groundwater within the railroad ROW or within 100 feet of the following properties:*
>
> - *2655 Middlefield Road (Geotracker Case T0608100544: Tilton Properties)*
> - *2682 Middlefield Road (Geotracker Case T0608100066: Beals and Martin Associates)*
> - *3157 Middlefield Road (Geotracker Case T0608100218: Figueras Property)*
> - *3233 Middlefield Road (Geotracker Case T0608152727: Zohrab's Garage)*
>
> *The Phase II ESA shall compare soil and groundwater sampling results against applicable*

environmental screening levels developed by the Regional Water Quality Control Board and/or Department of Toxic Substances Control. If the Phase II investigation identifies contaminant concentrations above the screening levels, a site-specific soil and groundwater management plan shall be prepared and implemented. The County shall consult with the RWQCB, DTSC, and/or other appropriate regulatory agencies to ensure sufficient minimization of risk to human health and the environment is completed. The site-specific soil and groundwater management plan shall be formulated with the objective of handling and disposing of excavated soil, groundwater, and/or dewatering effluent in accordance with federal and state hazardous waste disposal laws, and with state and local stormwater and sanitary sewer requirements, and at a minimum, shall include the following:

- *Identification and delineation of contaminated areas and procedures for limiting access to such areas to properly trained personnel;*
- *Procedures for handling, excavating, characterizing and managing excavated soils and dewatering effluent including potential procedures for managing and disposing of hazardous waste;*
- *Procedures for notification and report, including internal management and local agencies, as needed;*
- *Minimum requirements for site-specific health and safety plans, to protect the general public and workers in the construction area (note: these requirements and the environmental sampling results shall be provided to contractors who shall be responsible for developing their own construction worker health and safety plans and training requirements).*

Mitigation Measure HAZ-2: Contractor Specifications. *The County shall include the following measures in its contractor specifications, and such measures shall be implemented by the contractor(s) during construction:*

- *During all ground-disturbing activities throughout the Project area, the Contractor(s) shall inspect the exposed soil and groundwater for obvious signs of contamination, such as odors, stains, or other suspect materials. Should signs of unanticipated contamination be encountered, work will be suspended, San Mateo County Department of Environmental Health (SMCDEH) will be notified, and the area secured. An investigation shall be designed and performed to verify the presence and extent of contamination at the site, and a site-specific soil and groundwater management plan, as described under Mitigation Measure HAZ-1 above, shall be prepared and implemented.*
- *Prior to commencement of construction activities, the Contractor shall prepare and implement a site-specific health and safety plan (HASP), in accordance with State and federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910.120). Copies of the HASP shall be made available to construction workers for review during their orientation and/or regular health and safety meetings, and a copy provided to the County Department of Public Works (DPW). The HASP shall be amended, as necessary, if new information becomes available that could affect implementation of the plan.*

Adherence to Mitigation Measures HAZ-1 and HAZ-2 would reduce the potential construction impacts to a less-than-significant level.

Operation:

Project operation would not require storage or disposal of hazardous materials. While hazardous materials might be transported along Middlefield Road following completion of the project, or small quantities of hazardous materials might be used during ongoing road maintenance activities, such situations would be unchanged from existing conditions, and therefore do not represent an impact of the Project. The Project would introduce new landscaped areas into the street right of way, however San Mateo is a “no spray” County, therefore this new landscaping would not require future application of herbicides.

Conclusion:

With adherence to Mitigation Measures HAZ-1 and HAZ-2, and adherence to applicable federal, State, and local regulations, the construction-related impacts would be less than significant. Operational impacts would be less than significant.

Sources:

California Department of Conservation, 2010. Geologic Map of California, Interactive Map. Available online at http://maps.conservation.ca.gov/cgs/gmc/. Accessed December 5, 2017.

California State Water Resources Control Board (SWRCB), 2015. GeoTracker database search. Available online at https://geotracker.waterboards.ca.gov/map/?global_id=T0608100028. Accessed on December 6, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.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?	☐	☐	☒	☐

Discussion:

See discussion under Item 8.a above.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐

Discussion:

Construction:

There are six schools and learning centers for children within a quarter-mile of the Project area: the Institute for Human and Social Development, Inc., Learning Center, Wherry Academy, Everest Public High School, Garfield Elementary School, and Redwood City Head Start. As discussed under Item 8.a above, during construction, limited quantities of hazardous materials would be utilized including paints, solvents, adhesives, fuel, lubricants, grease, and asphalt. Because such activities would comply with relevant federal, State, and local regulations, the impacts on construction workers, the general public, and nearby schools would be less than significant.

In addition, as discussed above under Item 8.a there is potential for disturbance of existing contamination within the roadway to be disturbed, which could result in hazardous emissions or handling of hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, and such impacts could be potentially significant. As described in Item 8.a above, implementation of Mitigation Measures HAZ-1 and HAZ-2 would reduce the potential impacts from the disturbance of contaminated soils or groundwater on construction workers or the general public to a less-than-significant level, and such mitigation measures would also thereby reduce the potential impacts on nearby schools. Emissions of toxic air contaminants are addressed in Section 4.3, “Air Quality.”

Operation:

There would be no impacts to nearby schools during Project operation. Transportation of hazardous materials along the Project corridor after construction would be similar to existing conditions and would not be an impact of the Project.

Conclusion:

With adherence to Mitigation Measures HAZ-1 and HAZ-2, and implementation of applicable federal, State, and local regulations, the construction-related impacts would be less than significant. There would

be no operational impacts.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.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?	☐	☐	☐	☒

Discussion:

The Project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (also known as the "Cortese" List). As a result, Project construction and operation would not result in a significant hazard associated with a listed hazardous materials site.

Discussion of impacts related to known hazardous materials sites, including those on the Cortese List, adjacent to, or in the vicinity of, the Project area is provided under Item 8.a., above.

Conclusion:

There would be no impacts from the Project.

Sources:

California Department of Toxic Substances Control (DTSC), 2013. EnviroStor Database search. Available online at www.envirostor.dtsc.ca.gov/public. Accessed October 30, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.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, result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒

Discussion:

The nearest airport to the Project area is the San Carlos Airport. However, the Project area is more than three miles from the airport and is not located in their airport land use plan (ESA, 2015). Thus, the Project would not result in a safety hazard for people residing or working in the Project area related to airports.

Conclusion:

There would be no impacts from the Project.

Sources:

ESA, 2015. Final Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport. Available online at http://ccag.ca.gov/wp-content/uploads/2015/11/SQL_FinalALUCP_Oct15_read.pdf.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.f. For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒

Discussion:

There are no private airstrips within two miles of the Project area. Thus, the Project would not result in a safety hazard for people residing or working in the Project area related to airports.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Discussion:

Construction:

Construction of the Project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. The Regional Emergency Coordination Plan (RECP) (Governor's Office of Emergency Services, 2008) provides an all-hazards framework for collaboration among responsible entities and coordination during emergencies in the Bay Area. The RECP defines procedures for regional coordination, collaboration, decision-making, and resource sharing among emergency response agencies in the Bay Area. The RECP and its subsidiary plans do not identify specific evacuation routes, but rather define responsibilities among the multitude of interested and affected agencies and organizations, and identify general response strategies.

San Mateo County's emergency operations plan establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the San Mateo County Operational Area (County, 2015). The basic plan describes the County's general response to emergency management, and incorporates annexes containing the detailed actions and policies needed based on the type of disaster. Neither the basic plan, nor the annexes, identifies specific evacuation routes.

As discussed in Section 4.16, "Transportation and Traffic," construction activities would result in temporary lane closures and increased construction truck traffic. Such construction-related effects might temporarily hinder emergency evacuations and emergency response traffic. However, these effects would be temporary and would not fundamentally alter emergency response and evacuation routes in the vicinity of the Project area, which would generally remain unchanged from existing conditions. The impacts would be less than significant.

Operation:

As a result of the Project, Middlefield Road would be changed to a three-lane roadway (one lane in each direction, with a two-way center left-turn lane), with new buffered bike lanes, widened sidewalks and bulb-outs at the intersections, parallel parking, underground utilities, and other minor improvements, as well as upgraded sanitary sewer lines. As discussed in Section 4.16 below, the proposed roadway improvements would generally result in decreased traffic congestion and delay, except at a few specific intersections within the Project area. The Project would therefore not fundamentally alter emergency response or evacuation routes in the vicinity of the Project area, which would generally remain unchanged from existing conditions. As discussed in Section 4.16, emergency response vehicles would have preemption at intersections, and would be able to utilize the central left-turn lane to bypass other traffic. Thus, the Project is not expected to impair or interfere with adopted emergency response plan or emergency evacuation plan.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

County of San Mateo (County). 2015. Countywide Emergency Operations Plan. San Mateo County Sheriff's Office, Homeland Security Division, Office of Emergency Services. Accessed June 14, 2017: http://hsd.smcsheriff.com/emergency-plans

Governor's Office of Emergency Services. 2008. San Francisco Bay Area Regional Emergency Coordination Plan – Base Plan. Prepared by the Governor's Office of Emergency Services, Cities of Oakland, San Francisco, and San Jose, Counties of Alameda, Contra Costa, Marin, Napa, San

Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma, with support from Homeland Security. Accessed June 14, 2017: http://bayareauasi.org/sites/default/files/resources/RECP_BASE_PLAN.pdf.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

Discussion:

Construction:

The Project area is located in an urbanized and highly developed area; there are no wildland areas in the general vicinity of the Project area. The Project area is not identified by the California Department of Fire and Forestry Protection (CalFIRE) as being within a Very High Fire Hazard Severity Zone (CalFire, 2008).

However, according to the Association of Bay Area Governments (ABAG) interactive wildland-urban interface map, which identifies fire-threatened communities located at the wildland-urban interface, the portion of the Project area south of Fourth Avenue is within the wildland-urban interface.

Given the lack of wildland areas in the Project vicinity, the impact of Project construction on exposure of people or structures to significant risk of loss, injury or death involving wildland fires would be less than significant. It is noted that typical construction best practices to reduce fire hazards would be implemented as part of the Project, such as prohibiting smoking in undesignated areas and keeping flammable materials away from equipment.

Operation:

Project operation is not expected to exacerbate fire hazards from existing conditions, since the use of the Project area would be unchanged from existing conditions. Thus, the Project would not increase exposure of people or structures to wildland fires and impacts would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

Association of Bay Area Governments (ABAG). Resilience Program Wildland-Urban Interface Map, Available online at http://gis.abag.ca.gov/website/Hazards/?hlyr=wildfireThreat. Accessed October 28, 2017.

California Department of Forestry and Fire Protection (CalFIRE). 2008. Very High Fire Hazard Severity Zones in Local Responsibility Area, as recommended by CalFIRE. November 24.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.i. Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

Discussion:

See discussion under Item 7.f above.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.j. Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒

Discussion:

See discussion under Item 7.f above.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.k. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒

Discussion:

As discussed under Item 7.f above, the Project area is not located within a 100-year flood-hazard area as mapped on a federal flood hazard boundary, flood insurance rate map, or other flood hazard delineation map. The Project area is not within a dam inundation zone (San Mateo County 2005), nor is this area protected by levees (because ground elevations in the Project area are higher than Bay levees). Therefore, the Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding resulting from a levee or dam failure.

Conclusion:

There would be no impacts from the Project.

Sources:

San Mateo County. 2005. Dam Failure Inundation Areas – San Mateo County. San Mateo County Planning and Building Department. Available: http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/Dam_Failure_Inundation.pdf, accessed on October 30, 2017

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
8.l. Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Discussion:

Project construction or operation would not be affected by or exacerbate hazards due to seiche, tsunami, or mudflow. Seiche waves are not considered a hazard to the Project area because it is not located near large enclosed bodies of water. The Project area is also more than one mile from San Francisco Bay and is not within an identified tsunami inundation zone. The Project area is on relatively flat ground without immediately upgradient areas that could contribute large volumes of water resulting in mudflows.

Conclusion:

There would be no impacts from the Project.

4.9. Hydrology and Water Quality

Environmental Setting:

Middlefield Road crosses water and wastewater utilities, the Hetch Hetchy pipeline right-of-way, and two subsurface stormdrain collectors within the Project area. The curb-and-gutter system in the northern portion of the Project area drains towards Stanford Avenue's subsurface stormdrain, which conveys water to Bayfront Canal. The curb-and-gutter system in the southern portion of the Project area drains towards Fifth Avenue's subsurface stormdrain, which conveys water to Atherton Channel. Bayfront Canal and Atherton Channel drain to the San Francisco Bay (or the Bay) through Flood Slough.

The Flood Slough watershed includes a 9.5-square-mile area, including portions of the cities of Menlo Park and Redwood City, the towns of Atherton and Woodside, and unincorporated areas of San Mateo County. Tributary drainage areas convey stormwater to either Bayfront Canal or Atherton Channel east of Highway 101. The combined flow from the Atherton Channel and Bayfront Canal empties into Flood Slough through a tide gate control structure operated and maintained by the City of Redwood City. The tide gate prevents ocean water from the Bay from filling Bayfront Canal during high tide. However, because the tide gate closes automatically when tides are high, stormwater does not drain from urban areas into Flood Slough during high tide.

Special flood hazard areas are delineated north of Highway 101, approximately one mile downgradient of the Project area. Although there are no FEMA-designated 100-year floodplains in the Project area, neighborhoods adjacent to Bayfront Canal and Atherton Channel have experienced chronic flooding during large storms due to capacity issues as well as flow restrictions during high tide. These flooding issues do not extend as far inland as the Project area.

The Santa Clara Valley groundwater basin, San Mateo Plain, is beneath the Project area and is designated as a "very low priority" basin[6] by the Department of Water Resources (DWR, 2014). The San Mateo Plain consists of a shallow aquifer and a deep aquifer separated by a confining layer of old Bay mud. The southern portion of the San Mateo Plain also overlaps with the San Francisquito Cone subbasin, a groundwater basin hydraulically connected to the surface water-groundwater system of San Francisquito Creek. Groundwater recharge of the deep aquifer primarily occurs in the unconfined layer near the foothills further to the west, but the shallow aquifer is recharged throughout the urbanized area between the foothills and the Bay. Groundwater levels at wells in the vicinity of the Project area are approximately 15 to 20 feet below ground surface (SWRCB 2017).

The Clean Water Act (CWA) (33 USC 1251 et seq.) is the primary federal law that protects the quality of the nation's surface waters including lakes, rivers, and coastal wetlands. The act prohibits discharge of pollutants into the nation's waters unless specifically authorized by a permit. CWA Section 404 establishes the permitting program that regulates dredge or fill material in waters of the United States. CWA Section 402 establishes a permitting program for the discharge of any pollutant (other than dredge or fill material) into waters of the United States. In California, Section 402 permits are issued by the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs).

The Porter-Cologne Water Quality Act (California Water Code Section 13000 et seq.) is the primary state law that protects surface water and groundwater in California. The act requires projects that are discharging or proposing to discharge waste that could affect water quality, to file a report of waste discharge with the appropriate RWQCB. The act also provides for the development and periodic reviews of Water Quality Control Plans or "Basin Plans" which designate beneficial uses for surface water and groundwater resources, establish water quality objectives to protect those uses, and guide implementation programs to attain those objectives. Basin Plan policies are primarily implemented through the National Pollutant Discharge Elimination System (NPDES) permits.

[6] Priority levels represent the statewide assessment of the overall importance of groundwater in meeting urban and agricultural demands, based on the evaluation of the eight required data components specified in the California Water Code. Low and Very Low Priority groundwater basins generally have few people, limited irrigation, and little to no groundwater use and are not prioritized for monitoring under the California Statewide Groundwater Elevation Monitoring Program (DWR, 2015).

Stormwater discharges associated with construction activities are regulated under the Construction General Permit (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended). This permit applies to projects that have one or more acres of soil disturbance. The permit requires that project proponents develop and implement a construction site SWPPP that specifies BMP, erosion and sedimentation controls, run-on and runoff controls, and dewatering procedures for nuisance-water removal. Permit registration documents and a site-specific SWPPP are filed with the SWRCB for coverage under the Construction General Permit. Compliance with the Construction General Permit is overseen and enforced by the RWQCB.

The San Francisco Bay RWQCB also regulates stormwater discharges from municipalities and local agencies in the Bay Area under a single municipal regional stormwater permit (Order No. R2-2015-0049). NPDES permit provision C.3 requires source control, site design, and stormwater treatment measures to address stormwater pollutants and to prevent increases in flow rates from new development and redevelopment projects, including road projects that create 10,000 square feet or more of new contiguous impervious surfaces from streets, sidewalks, or bicycle lanes and which construct new streets or widen existing streets with additional traffic lanes. The Project's roadway reconstruction does not widen existing streets and roads with additional traffic lanes; therefore, the Project is not subject to provision C.3.b.ii(4) of the permit.) New development and redevelopment projects subject to the County's planning, building, development, or other comparable review, but not regulated by C.3 provisions, are encouraged to use micro-detention and other features that facilitate groundwater infiltration, such as the Project's bulb outs. The San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) has published the C.3 Stormwater Technical Guidance (2016) to facilitate these low impact designs.

Provision C.6 requires construction sites to implement year-round effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non-storm water management through all phases of construction. The County and other Bay Area municipalities review erosion control plans for the appropriateness and adequacy of BMPs and inspect construction sites to confirm that these measures are implemented. To facilitate compliance with the C.3 and C.6 provisions, the SMCWPPP has developed a review checklist for development projects identifying specific construction site BMPs, source controls, and low impact development design measures.

Sources:

California Department of Water Resources (DWR), 2014. California Groundwater Elevation Monitoring Basin Prioritization Process, June.

San Francisco Bay Regional Water Quality Control Board (RWQCB). 2015. Municipal Regional Stormwater NPDES Permit. Order No. R2-2015-0049, NPDES Permit No. CAS612008. November 19.

San Mateo Countywide Water Pollution Prevention Program. 2016. C.3 Stormwater Technical Guidance, Version 5.0. June.

State Water Resources Control Board (SWRCB). 2017. GeoTracker search results for Middlefield Road. Available: http://geotracker.waterboards.ca.gov/, accessed on October 27, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
9.a. Violate any water quality standards or waste discharge requirements (consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash))?	☐	☒	☐	☐

Discussion:

Construction:

Construction activities would include importing materials such as asphalt, mortar, concrete, cement; sawing, cutting, and grinding for pavement removal; trenching for utilities; paving and sealing operations

for the sidewalk and road; and removal and disposal of materials. Total disturbed acreage at the construction site is estimated to be 5.5 acres and ground disturbance for the underground utility trench could occur up to 6 feet below the ground surface.

Construction activities such as excavation, grading, trenching, and backfilling, could result in disturbed soils being temporarily exposed to the erosive forces of wind, rain, and stormwater runoff, and cause the release of sediment to nearby drainage ditches. Stormwater runoff could also be contaminated with chemicals typically used during construction (e.g., fuels, oils, and solvents) through the daily use, transportation, and storage of these materials, if not properly controlled, which could provide new sources of polluted runoff to downstream drainage areas. Construction activities also have the potential to impact groundwater quality if groundwater is directly exposed to construction contaminants, such as after hazardous material spills.

Because disturbed areas within the Project area would be greater than one acre, the Project would obtain coverage under the SWRCB's Construction General Permit. As part of the Construction General Permit, the contractor would prepare and implement a SWPPP and BMPs to minimize wind- and water-related soil and sediment discharges at the construction site, minimize potential contamination of stormwater and non-stormwater discharges, and prevent hazardous material spills. The SWPPP would be developed in compliance with the permit (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended), as well as with construction BMPs from the SMCWPPP. Such measures would include, but not be limited to:

Minimize Active Construction Area. The number of access routes, size of staging areas, and the size of the active construction sites would be limited to the minimum necessary to achieve Project objectives and the staging, storage, equipment laydown, access routes, and parking areas would be established on paved or previously disturbed areas to the extent feasible.

Implement Erosion Control. Standard construction site erosion control measures would be used where sediment from exposed slopes could erode and enter drainage facilities. Areas of disturbed soils that slope toward drainages would be stabilized when not actively in use to reduce erosion potential. Materials used for the erosion control measures and sediment barriers would be weed-free.

Implement Trash Control. Food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers (trash cans) and would be removed from the construction site on a regular basis.

Hazardous Spill Prevention. Vehicles and equipment would be maintained in proper working condition to minimize potential fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. Service/maintenance vehicles would carry materials to absorb leaks or spills. Servicing, refueling, and staging of construction equipment would take place only at designated areas where a spill would not flow to drainages. Equipment washing, if needed, would occur only in designated locations where water cannot flow into drainage channels. Hazardous spills would be cleaned up immediately and contaminated soil would be properly disposed of at a licensed facility.

There is a potential that contaminated soil and groundwater could be encountered during trenching near areas with historic contamination. As discussed in Section 4.8, "Hazards and Hazardous Materials," there are four locations along Middlefield Road between MacArthur Avenue and Sixth Avenue that, at one time, caused gasoline contamination in soil or groundwater from leaking underground storage tanks (SWRCB 2017). Although soils were excavated at these sites and remediation actions were closed by the late 1990s, there is a potential that residual soil contamination may be present near these sites. In addition, potential contamination from heavy metals or organic contaminants within the railroad ROW may have also impacted soil and groundwater.

Because the joint utility trench would be excavated within 100 feet of areas with potential historic contamination, this excavation could encounter residual contamination in soil and groundwater. Dewatering operations, including those associated with stormwater collected in trenches, could have potentially significant effects if contaminated dewatering effluent is not handled properly.

Mitigation Measures HAZ-1 and HAZ-2 require the safe handling and disposal of contaminated soil or water encountered during construction. Mitigation Measure HAZ-1 requires a site-specific soil and

groundwater management plan to be prepared and implemented by the County if a Phase II environmental site investigation identifies metals and organic contaminants above screening levels in soil and groundwater collected within the railroad ROW and within 100 feet of the properties containing the previous leaking underground storage tanks. The plan would specify procedures for handling, excavating, characterizing and managing contaminated soils and dewatering effluent. Implementation of this plan would ensure that the handling and disposing of excavated soil, groundwater, and/or dewatering effluent are in accordance with federal and state hazardous waste disposal laws, and in accordance with state and local stormwater and sanitary sewer requirements. Mitigation Measure HAZ-2 requires the contractor to inspect exposed soils and groundwater for signs of unanticipated contamination and, if found, to develop and implement the site-specific soil and groundwater management plan. Implementation of Mitigation Measures HAZ-1 and HAZ-2 would reduce potential impacts to less than significant levels.

In summary, the construction contractor would implement measures to reduce potential erosion impacts during construction in accordance with the Construction General Permit and SMCWPPP construction BMPs. In accordance with Mitigation Measures HAZ-1 and HAZ-2, a site-specific soil and groundwater management plan would also be developed if contaminated soils or groundwater are found to be present or are encountered during construction. Because control measures would be implemented during construction, impacts related to the potential violation of water quality standards and substantial degradation of water quality would be less than significant with mitigation.

Operation:

The Project would reconfigure Middlefield Road from a four-lane, two-way roadway to a three-lane roadway between Fifth Avenue and MacArthur Avenue, and would include undergrounding of utility infrastructure and replacement of sanitary sewer lines. Each intersection would have a curb extension with a small bioretention basin of vegetated permeable soils. The bioretention basins would receive runoff from the sidewalks, curb, and gutters and allow attenuation of the runoff and infiltration into soil. The residual runoff would be discharged to the public drain system in Middlefield Road and conveyed to collection systems along Stanford and Fifth Avenue.

Although the Project would repave Middlefield Road and extend sidewalk areas inward towards the street, the Project would not increase total impervious area, as nearly all of the Project area is currently paved. Although the Project is not subject to the Municipal Regional Stormwater Permit C.3 requirements to treat the redeveloped impervious areas (because the Project does not increase the number of traffic lanes), small bioretention basins would still be incorporated into curb extensions and a portion of the stormwater runoff from sidewalks and gutters would be treated. The bioretention facility is a soil and plant based filtration system that removes pollutants through physical, biological, and chemical treatment processes. It slows water velocities and allows particulates (and particulate–bound contaminants) to settle. Stormwater then percolates through soil to an underlying rock layer, which provides an opportunity for soil bacteria to degrade the trapped contaminants. This process also encourages infiltration. Ongoing operation and maintenance of the roadway and stormwater facilities would be conducted in accordance with the County's Watershed Protection Program Maintenance Standards, which include BMPs designed to minimize impacts to water quality and fish and wildlife habitat and to meet NPDES permit requirements (County of San Mateo 2004).

In summary, the Project would implement post-construction stormwater management controls that would treat runoff to a greater extent than what currently occurs, and future maintenance activities would adhere to County standards that are protective of water quality. Operation of the Project would therefore not substantially degrade water quality (and would potentially improve water quality), and impacts related to the potential violation of water quality standards and substantial degradation of water quality would be less than significant.

Conclusion:

With adherence to Mitigation Measures HAZ-1 and HAZ-2, the construction-related impacts would be less than significant. Operational impacts would be less than significant.

Sources:

County of San Mateo. 2004. San Mateo County Watershed Protection Program Maintenance Standards. Final Draft. April 2004. Available: https://publicworks.smcgov.org/watershed-protection-and-maintenance-standards, accessed June 21, 2018.

State Water Resources Control Board (SWRCB). 2017. GeoTracker search results for Middlefield Road. Available: http://geotracker.waterboards.ca.gov/, accessed on October 27, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
9.b. Significantly deplete groundwater supplies or interfere significantly with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐

Discussion:

Construction:

Water demands during construction (for dust control, concrete mixing, etc.) would be met by existing service connections to municipal suppliers or water would be imported by truck. Construction demands for water are small compared to the storage capacity of the groundwater basin which extends over 75 square miles (DWR 2004). Construction activities would not require new wells or substantial increases in pumping at regional municipal wells, nor would it interfere with groundwater recharge that could occur if the Project were converting pervious surfaces to impervious surfaces. Because the Project would not substantially increase groundwater pumping or cause substantial changes in groundwater elevations, impacts to groundwater supply would be less than significant.

Operation:

As discussed above, the Project would include additional landscaping in the Project area, which would increase infiltration locally. The proposed biotreatment areas would detain a portion of the stormwater runoff from the site and encourage on-site infiltration. No groundwater extraction would occur. Therefore, potential impacts of the Project on groundwater supplies and groundwater elevations would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

California Department of Water Resources (DWR). 2004. Santa Clara Valley Groundwater Basin, San Mateo Subbasin. California's Groundwater Bulletin 118. February 27.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
9.c. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in significant erosion or siltation on- or off-site?	☐	☐	☒	☐

Discussion:

Construction:

If unconsolidated sediments are exposed to new flow paths, construction activities such as grading, excavation, and trenching have the potential to affect siltation in downgradient areas due to changes in existing drainage patterns. However, erosion and siltation would be managed in active construction areas as per the construction SWPPP, as discussed above under Item 9.a. The SWPPP measures to be

implemented would minimize or prevent unconsolidated sediments from being exposed to new flows. Construction impacts to erosion and siltation would be less than significant.

Operation:

Post-construction drainage patterns would be similar to pre-Project conditions. Stormwater would sheet flow from the sidewalks to the curb and gutter. The curb-and-gutter system in the northern portion of the Project area would drain towards Stanford Avenue's subsurface stormdrain, which conveys water to Bayfront Canal. The curb-and-gutter system in the southern portion of the Project area would drain towards Fifth Avenue's subsurface stormdrain, which conveys water to Atherton Channel.

As discussed under Item 9.b above, a portion of the stormwater runoff would be detained in small bioretention basins at each street crossing. This detention would allow for particulates to settle, which can reduce sedimentation in downgradient areas. As a result, long-term impacts to erosion and siltation would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
9.d. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a steam or river, or significantly increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐

Discussion:

Construction:

Although there would be temporary changes in existing drainage patterns at the construction site, construction activities would not increase the amount of impervious area or result in additional stormwater runoff. The Project area is not located within a FEMA-designed 100-year floodplain (FEMA 2012), and there are no waterways that traverse the Project area. The presence of construction equipment and materials would not increase flooding on- or off-site, and flooding and flood flows are not anticipated in the Project area during large storm events. Construction impacts would be less than significant.

Operation:

Post-construction drainage patterns would be similar to pre-Project conditions. The curb-and-gutter systems in the Project area would drain to local collection systems that discharge water to the Bay. The Project area is currently impervious and reconfiguring the road would rework existing impervious surfaces, but also add new landscaped areas. Because the bioretention facilities would detain and infiltrate a portion of the stormwater runoff instead of immediately releasing water from the site in direct response to precipitation, the bioretention facilities could reduce the magnitude of and delay the timing of peak runoff from the site, attenuating flooding issues in downgradient areas. Effects to flooding would therefore be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

Federal Emergency Management Agency (FEMA). 2012. Flood Insurance Rate Map, San Mateo County, California, Map No. 06081C0302E. October 16.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
9.e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐

Discussion:

As discussed under Item 9.a above, the Project would not generate substantial amounts of new or polluted runoff to stormdrains. The construction contractor would implement a SWPPP and BMPs to minimize wind- and water-related soil and sediment discharges at the construction sites, minimize potential contamination of stormwater and non-stormwater discharges, and prevent hazardous material spills. No additional sources of stormwater runoff would be created by Project operation as the area of impervious surface would be similar to existing conditions. A portion of the runoff would infiltrate through the Project's bioretention facilities, which would improve water quality and reduce the quantity of stormwater runoff compared to existing conditions; therefore, the Project would not cause the capacity of stormwater drainage systems to be exceeded. Impacts to stormwater drainage systems would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project: 9.f. Significantly degrade surface or groundwater water quality?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☒	☐	☐

Discussion:

Construction:

As discussed under Item 9.a above, construction activities could affect surface water and groundwater quality if not properly controlled. However, the construction contractor would implement a SWPPP and BMPs to minimize wind- and water-related soil and sediment discharges at the construction sites, minimize potential contamination of stormwater and non-stormwater discharges, and prevent hazardous material spills. In addition, a groundwater management plan would be developed prior to construction to document implementation measures that would be used to manage construction dewatering in areas near historic contamination, as required by Mitigation Measures HAZ-1 and HAZ-2.

Operation:

After construction is complete, surface water and groundwater quality is expected to be similar to pre-Project conditions, with the exception that some runoff would be treated or infiltrated by the Project's bioretention facilities. The bioretention facilities would be expected to improve water quality; therefore, the operational impacts would be less than significant.

Conclusion:

With adherence to Mitigation Measures HAZ-1 and HAZ-2, the construction-related impacts would be less than significant. Operational impacts would be less than significant.

Would the project: 9.g. Result in increased impervious surfaces and associated increased runoff?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☒	☐

Discussion:

As discussed under Item 9.a above, the Project would repave Middlefield Road, extend sidewalk areas inward towards the street, and incorporate small bioretention basins into curb extensions. Nearly all of the Project area is currently paved and therefore these changes would not increase total impervious area or the associated stormwater runoff. Runoff impacts associated with changes to impervious surfaces would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

4.10. Land Use and Land Use Planning

Environmental Setting:

The Project area is located in the North Fair Oaks community. North Fair Oaks is an unincorporated part of San Mateo County in the nine-county San Francisco Bay Area. The community is bound by Redwood City to the north, west, and southwest; the Town of Atherton to the east; and the City of Menlo Park to the southeast.

North Fair Oaks supports a wide variety of land uses, ranging from single-family residential to industrial. Almost 50 percent of North Fair Oaks is in residential use, while commercial and industrial uses account for approximately 25 percent of the community. Industrial uses are concentrated along the UPRR right-of-way and in the northwestern corner of the community. The industrial areas are generally surrounded by primarily medium density residential uses. Commercial land uses are dispersed along three major traffic thoroughfares, El Camino Real, Middlefield Road, and Fifth Avenue.

Middlefield Road is oriented generally north /south, parallel to and east of nearby El Camino Real. The roadway traverses most of the North Fair Oaks community. Properties abutting the Middlefield Road ROW are mostly retail, commercial, or light industrial uses, such as locally-owned restaurants, hair and beauty salons, professional offices, retail stores, auto body and repair workshops, and used car sales. San Mateo County offices, including the North Fair Oaks Sheriff sub-station, are located on the east side of Middlefield Road between Third Avenue and Fourth Avenue.

On the west side of Middlefield Road, near the railroad crossing, are the Fair Oaks Health Center, Fair Oaks Community Center, and Fair Oaks Branch Library. The area behind the Health Center, known as Middlefield Junction, is planned for development of affordable housing and community-serving uses to complement the Health Center. The Redwood Junction Industrial Park is located north of the Health Center and utilizes the Health Center driveway.

Areas to the west of Middlefield Road primarily consist of high-density multi-family residential development, with duplexes, triplexes, and smaller multi-family apartments, and the Everest Public High School between Fourth Avenue and Fifth Avenue. Areas to the east of Middlefield Road are composed primarily of low-density single-family residential uses, with some duplexes and low-density multi-family housing (San Mateo County 2011).

Regulatory Framework:

The *San Mateo County General Plan* (San Mateo County 1986) (General Plan) was adopted by the County Board of Supervisors in 1986, with recent amendments occurring in September 2017. The General Plan provides information on existing natural and man-made conditions of the physical environment. The plan indicates the type and intensity of development that the County desires, where it should be located, and how it should be regulated. The objectives of the General Plan are to:

- update and expand the data base to include, at minimum, information required by State Law;
- ensure that all parts of the General Plan, particularly policies, are consistent with each other;
- support Area Plan policies and ordinances;
- create a consolidated General Plan usable to decision makers, the staff, and the public; and
- provide an opportunity for the general public, the Planning Commission, and the County Board of Supervisors to develop General Plan policy that reflects current community values that will serve as a guide for development and conservation.

No policies in the San Mateo County General Plan are applicable to the Project (San Mateo County

1986). Rather, *North Fair Oaks Community Plan* (Community Plan) serves to guide decisions about the physical development of North Fair Oaks. The Community Plan allows for specific, local application of the more broad based policies contained in the County General Plan. Applicable policies from the Community Plan are discussed below.

San Mateo County General Plan Land Use Designations

The San Mateo County General Plan land use map designates the areas adjacent to Middlefield Road from Douglas Avenue to First Avenue as Commercial Mixed Use, and from First Avenue to Sixth Avenue as Neighborhood Mixed Use.

North Fair Oaks Community Plan

The Project area is identified in the County's General Plan as being within the North Fair Oaks Community Plan Area. The Community Plan is considered part of the County General Plan and is consistent with the goals and policies incorporated in the San Mateo County General Plan. The County Board of Supervisors adopted the *North Fair Oaks Community Plan* (Community Plan) on November 15, 2011. The primary goals of the Community Plan are to (San Mateo County 2011):

- improve connectivity and reduce mobility barriers throughout North Fair Oaks for all types of travel,
- improve area health and safety by increasing walkability and bikeability within North Fair Oaks;
- improve travel and transit connections between North Fair Oaks and surrounding communities and the region, provide safe and affordable housing;
- maintain and enhance a vital and viable mix of land uses, provide adequate infrastructure to support current uses and facilitate future development;
- promote development and redevelopment of unused and underutilized land;
- maintain local employment opportunities and facilitate new job-generating development;
- improve access to park and recreational facilities for all area residents; and
- support the creation of new public transit routes and stations and promote appropriate development to facilitate creation of new transit facilities.

The following goals and policies from the Land Use Element, Circulation and Parking Element, and Health and Wellness Element of the Community Plan (San Mateo County 2011) also provide information on the County's vision for the North Fair Oaks area:

Goal 2.5: Create distinct gateways at key locations in North Fair Oaks that reflect the area's unique identity.

- **Policy 5A:** Designate the following six locations as primary gateways: El Camino Real and Fifth Avenue; Middlefield Road at the Southern Pacific Railroad crossing (at the potential site of the multi-modal transit hub); Middlefield Road and 8th Avenue; Fifth Avenue and Bay Road; Spring Street and Charter Street; and Marsh Road at the Southern Pacific Railroad crossing. Apply distinctive design treatments and streetscape elements to distinguish gateways as key entry and exit points to and from North Fair Oaks. The intersection of Middlefield Road and Fifth Avenue is also designated as a neighborhood activity node where special intersection and corner treatment (such as creation of a plaza or other community space) should be considered.

Goal 3.2: Improve existing pedestrian facilities (sidewalks, sidewalk furniture, trees, paths, and other facilities), and provide new facilities throughout North Fair Oaks (see Figure 3.3: Future Bicycle and Pedestrian System).

- **Policy 2A:** Improve and enhance pedestrian facilities along key streets that connect to destinations throughout North Fair Oaks to prioritize "complete streets" design standards that give equal space to pedestrians, bicyclists, public transit, and cars. The design standards and guidelines in Chapter 7: Design Standards and Guidelines support this objective.

- **Policy 2B:** Modify road standards as presented in Chapter 7: Design Standards and Guidelines, particularly along destination streets such as Middlefield Road and major corridors including El Camino Real and Fifth Avenue, to achieve a safe and inviting pedestrian environment. Improvements should include the use of elements such as wider sidewalks, mid-block crosswalks, street trees, planting strips, and curb extensions for urban commercial corridors or residential street improvements.
- **Policy 2C:** In conjunction with street improvements, implement sidewalk improvements to achieve a continuous ADA-accessible sidewalk that is a minimum of five feet wide along all streets. Provide eight-foot sidewalks on pedestrian-oriented commercial corridors such as Middlefield Road and El Camino Real.
- **Policy 2F:** Evaluate the feasibility of implementing a lane reduction, or "road diet" for Middlefield Road between Douglas Avenue and 8th Avenue. By reducing the number of travel lanes, the roadway width can be reallocated to provide bike lanes, widened sidewalks, crosswalk curb extensions (bulbouts), and other streetscape improvements.

Goal 5.10: Provide safe, accessible, and convenient pedestrian routes throughout North Fair Oaks.

- **Policy 10D:** Ensure that there are safe pedestrian paths or sidewalks along all streets in North Fair Oaks, and improve crosswalks, signage, and signals at key intersections.

Goal 5.12: Foster "complete streets" that balance auto, transit, pedestrian, and bicycle uses on key streets in North Fair Oaks.

- **Policy 12A:** Ensure that major corridors in North Fair Oaks such as Middlefield Road and Fifth Avenue include sidewalks; bike lanes or wide paved shoulders; prominent signage; dedicated bus lanes if appropriate; accessible, sheltered bus stops; frequent and safe crossing opportunities; medians or islands to serve as resting points mid-crossing where needed; accessible pedestrian signals; and narrower auto travel lanes to create a balance between auto, transit, bicycle and pedestrian modes.

San Mateo County Zoning Ordinance

Areas adjacent to Middlefield Road are zoned by San Mateo County from Douglas Avenue to First Avenue as C2/NFO/S-1/DR (General Commercial/North Fair Oaks/Residential Density Combining District/Design Review) and from First Avenue to Sixth Avenue: adjacent to NMU/DR (Neighborhood Mixed-Use/Design Review).

Sources:

San Mateo County. 1986. San Mateo County General Plan. Available: http://planning.smcgov.org/general-plan, accessed November 19, 2017.

San Mateo County. 2011 (December). North Fair Oaks Community Plan. Available: http://planning.smcgov.org/north-fair-oaks-community-plan, accessed December 4, 2017.

Would the project: 10.a. Physically divide an established community?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☐	☒

Discussion:

Construction:

Construction of the Project would not physically divide established communities. Access to commercial and light industrial land uses; San Mateo County offices, including North Fair Oaks Sheriff sub-station; Fair Oaks Health Center; Fair Oaks Community Center; and Fair Oaks Branch Library would be maintained through construction phasing and provision of temporary pedestrian pathways to maintain customer access to these facilities and local businesses. Construction activities would not require closure

of any publicly accessible roadway in the vicinity of the Project area that provides connectivity between and within the existing community. While temporary lane closures would occur during construction, at least one lane in each direction would be maintained along Middlefield Road during construction. Therefore, the Project would not physically divide an established community during Project construction.

Operation:

The Project would reconfigure Middlefield Road from a four-lane, two-way roadway to a three-lane roadway. The Project would not close any publicly accessible roadway that exists today and Middlefield Road would continue to provide connectivity among the existing commercial, industrial, and residential uses in the Project area and vicinity, and would improve pedestrian connections across Middlefield Road through improvements to crosswalks and bulb-outs. The replaced sanitary sewer system would be underground, similar to existing conditions, and therefore would not introduce any physical barrier to the community. The proposed undergrounding of utilities, widened sidewalks, and buffered bike lanes would provide for improved pedestrian and bicyclist circulation through the Project area, and the proposed street trees would contribute to community identity. The proposed modifications at the Fair Oaks Health Center driveway would also improve access to community facilities. Therefore, operation of the Project would not physically divide an established community.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
10.b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion:

Construction:

There are no policies in the North Fair Oaks Community Plan applicable to construction of the Project. Compliance of Project construction with other plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, such as noise, air quality, and stormwater runoff, is discussed in the relevant sections of this Initial Study. All construction work would occur within Middlefield Road; therefore, there are no construction activities that would conflict with land use designations or zoning of areas adjacent to the Project area.

Operation:

The Project would be consistent with the North Fair Oaks Community Plan policies. The Project would support Community Plan Policies 2A, 2B, and 2C of the Circulation and Parking Element and Policies 10D and 12A of the Health and Wellness Element by providing buffered bike lanes; creating bulb-outs that would enhance pedestrian safety by increasing pedestrian visibility, shortening the turning movements of slow turning vehicles, and visually narrowing the roadway; and providing wider sidewalks that would accommodate street amenities, such as benches, landscaping, street lights, trash receptacles, street art, public spaces, and wayfinding signage (see Chapter 2, “Project Description,” for additional details). As described further in Section 4.1, “Aesthetics,” the Project would further support Community Plan Policies 2A and 2B of the Circulation and Parking Element by providing improvements to Middlefield Road consistent with design standards and guidelines provided in Chapter 7, “Design Standards and Guidelines,” of the Community Plan. Furthermore, reconfiguring Middlefield Road from a four-lane, two-way roadway to a three-lane roadway would support Community Plan Policy 2F, which promotes implementing a road diet for Middlefield Road.

In addition, the Project would not include new land uses that conflict with land use designations or zoning of areas adjacent to Middlefield Road.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
10.c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion:

There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans covering the Project area. Therefore, neither construction nor operation of the Project would conflict with applicable habitat conservation plans.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
10.d. Result in the congregating of more than 50 people on a regular basis?	☐	☐	☐	☒

Discussion:

Construction:

The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). Therefore, Project construction would not result in more than 50 people congregating.

Operation:

The Project would reconfigure Middlefield Road from an existing four-lane, two-way roadway to a three-lane roadway, with wider sidewalks, buffered bike lanes, replacement of sanitary sewer lines and undergrounding of utilities. Therefore, operation of the Project would not introduce structures or facilities that would result in more than 50 people congregating on a regular basis.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
10.e. Result in the introduction of activities not currently found within the community?	☐	☐	☐	☒

Discussion:

Construction:

Construction activities occur routinely throughout the community; therefore, construction of the Project would not result in the introduction of new activities.

Operation:

The Project would reconfigure Middlefield Road from an existing four-lane, two-way roadway to a three-lane roadway, which would continue to be used by vehicular, bicycle, pedestrian, and public transit uses, and serve as a primary thoroughfare for the community. Sanitary sewer and other utilities are already present within the Project area, therefore operation of the replaced sanitary sewer or underground utilities would not represent a new activity. Therefore, operation of the Project would not introduce activities not

currently found within the community.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
10.f. Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?	☐	☐	☐	☒

Discussion:

Construction:

The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). Given the short construction period, it is not anticipated that workers would relocate their residence to the Project area from other areas. Therefore, construction of the Project would not encourage new development within or in the vicinity of the Project area and there would be no impact.

Operation:

The Project would not result in the construction of new housing or commercial or industrial businesses. The Project would reconfigure Middlefield Road from an existing four-lane, two-way roadway to a three-lane roadway. While the Project would improve a portion of Middlefield Road and provide for amenities such as bike lanes, benches, landscaping, trash receptacles, and public spaces, it would not extend the road or add other transportation infrastructure that could encourage development of presently undeveloped areas or increase development intensity within the Project area.

In addition, the Project would include replacement of approximately 6,550 linear feet of the existing 6-, 8-, and 24-inch diameter VCP sanitary sewer mains within Middlefield Road. The existing pipes would be replaced with new 6-, 8-, and 24-inch PVC or HDPE pipes. The majority of existing 6-inch lines would be upsized to 8-inch lines; however, the flow capacity of the pipes would not be substantially increased, because HDPE pipes are typically thicker than VCP pipes. The upgraded sanitary sewer mains would serve existing and already planned development in the Project vicinity and would not be sized such that new development would be encouraged in the Project area or in the surrounding areas, and there would be no impact.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
10.g. Create a significant new demand for housing?	☐	☐	☐	☒

Discussion:

Construction:

See discussion under Item 10.f above.

Operation:

The Project would not include development of new housing or create employment opportunities that would increase the demand for new housing; therefore, there would be no impact.

Conclusion:

There would be no impacts from the Project.

4.11. Mineral Resources

Environmental Setting:

According to the USGS Mineral Resources On-Line Spatial Database and the County's General Plan, the Project area is not in close proximity to or located on a known mineral resource.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
11.a. Result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the state?	☐	☐	☐	☒

Discussion:

Because the Project area is not located near or on a known mineral resource, there would be no loss of mineral resource availability resulting from construction or operation of the Project.

Conclusion:

There would be no impacts from the Project.

Sources:

United States Geological Survey (USGS). 2017. Mineral Resources On-Line Spatial Data, Available at https://mrdata.usgs.gov/general/map.html, Accessed April 12, 2017

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
11.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?	☐	☐	☐	☒

Discussion:

See discussion under Item 11.a above.

Conclusion:

There would be no impacts from the Project.

Sources:

San Mateo County. 1986. San Mateo County General Plan. Available: http://planning.smcgov.org/general-plan, accessed November 19, 2017.

4.12. Noise

Environmental Setting:

Fundamentals of Acoustics:

Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and, therefore, may cause general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment. Decibels (dB) are the standard unit of measurement of the sound pressure generated by noise sources and are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale for earthquake magnitudes. A doubling of the energy of a noise

source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the noise energy would result in a 3-dB decrease. The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-weighted scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. Noise levels using A-weighted measurements are written A-weighted decibels (dBA) or dB. All noise levels presented below are A-weighted unless described otherwise.

Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of frequencies from distant sources that create a relatively steady background noise in which no particular source is identifiable. Average noise levels over a period of minutes or hours or equivalent sound levels are usually expressed as dB Equivalent Noise Level (L_{eq}), which typically assumes a 1-hour average noise level and is used as such in this Initial Study. The maximum noise level (L_{max}) is the highest sound level occurring during a specific period. The Community Noise Equivalent Level (CNEL) is the 24-hour L_{eq} with a 5-dB "penalty" for the evening noise-sensitive hours from 7 p.m. to 10 p.m. and a 10-dB "penalty" applied during nighttime noise-sensitive hours from 10 p.m. to 7 a.m. The day-night average noise level (L_{dn} or DNL) is similar to the CNEL but with no adjustment (penalty) during evening hours; that is, daytime is defined as 7 a.m. to 10 p.m.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dB (increase or decrease) and that a change of 5 dB is readily perceptible (California Department of Transportation [Caltrans] 2013). A noise level that increases by 10 dB is perceived as twice as loud and a noise level that decreases by 10 dB is perceived as half as loud.

Fundamentals of Groundborne Vibration

The Federal Transit Administration (FTA) has developed guidelines for assessing the significance of vibration produced by transportation sources and construction activity. To address human response (annoyance) to ground-borne vibration, FTA has established maximum-acceptable vibration thresholds for different land uses. These guidelines recommend 65 vibration decibels (VdB) for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, and laboratory facilities), 80 VdB for residential uses and buildings where people normally sleep, and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, places of worship, clinics, and offices). Also, according to FTA guidelines, a vibration-damage criterion of 0.20 inch per second (in/sec) PPV should be considered for non-engineered timber and masonry buildings. Furthermore, structures or buildings constructed of reinforced concrete, steel, or timber have a vibration-damage criterion of 0.50 in/sec PPV pursuant to the FTA guidelines (FTA 2006).

Existing Conditions

Noise-sensitive land uses are those uses where quiet is essential to the purpose of the land use. Noise-sensitive land uses include residences and buildings where people normally sleep (including hospitals and hotels), as well as uses where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material such as schools, libraries, offices, theaters, and houses of worship. Consistent with the San Mateo County zoning map, the closest noise-sensitive uses to the Project area generally appear to be residential properties along the intersecting streets south of the railroad crossing, which in general are approximately 150 feet from the centerline of Middlefield Road. In some locations (e.g., Dumbarton Avenue to the west of Middlefield Road), residential properties are directly adjacent to the Project area.

While not considered noise sensitive, non-residential structures appear to be as close as 40 feet from the centerline of Middlefield Road and would be evaluated for potential façade damage due to vibration produced from Project construction activities.

The existing noise environment near the Project area is influenced primarily by vehicular traffic on Middlefield Road and cross streets from Mac Arthur Avenue to First Avenue. Other sources of noise in the Project area include the freight service along the UPRR rail line crossing Middlefield Road between Pacific Avenue and Hurlingame Avenue, at the north end of the Project area. The existing noise environment near the Project area is also influenced by commercial activities along Middlefield Road, and

natural sources (e.g., wind and birds). There are two airports in the vicinity of the Project area, including the San Carlos Airport, approximately 2.9 miles to the north and the Palo Alto Airport approximately 4.8 miles to the southeast. However, the Project area is not within the established Airport Influence Area for either airport.

AECOM estimated ambient noise levels near noise-sensitive uses using typical noise levels from railroads, and estimates based on the existing traffic volumes along Middlefield Road[7] in the Project area and the vicinity. Table 1 in Appendix C includes detailed estimates for segments of Middlefield Road in the Project area and the vicinity. Existing traffic noise levels along the roadways in the Project vicinity are estimated to range from 65.3 dBA L_{dn} (65.8 dbA L_{eq}) to 68.1 dBA L_{dn} (68.5 dbA L_{eq}) at 50 feet from the centerline of Middlefield Road.

To evaluate the effects of the railroad operation noise on the Project area, the analysis used the mean Sound Exposure Level from a single noise event of 102 dB (Federal Transit Administration [FTA], 2006). Using the mean Sound Exposure Level (102 dB) and the number of rail operations per day (assumed 14), a noise level of 71 dBA L_{dn} (61 dBA L_{eq}) at 50 feet from the centerline of the railroad tracks was calculated.

The existing vibration environment is also dominated by transportation-related sources. Heavy truck traffic can generate ground-borne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, ground-borne vibration levels generated from vehicular traffic are not typically perceptible outside of the road ROW. The other source of existing ground-borne vibration in the Project area would be the freight activity along the UPRR railroad line. The closest buildings to the Project area are approximately 100 feet from the existing railroad tracks. Heavy rail vehicles operating at 50 miles per hour (mph) would generate ground-borne vibration of approximately 0.07 PPV (85 VdB) at a distance of 50 feet and approximately 0.031 PPV (78 VdB) at a distance of 100 feet from the track's centerline (FTA 2006). The freight trains in the Project area operate at substantially slower speeds and would result in considerably less vibration.

Regulatory Framework

The Noise Element of the San Mateo County General Plan contains the following policies and objectives relevant to the Project:

- 16.1 Strive toward an environment for all residents of San Mateo County which is free from unnecessary, annoying, and injurious noise.
- 16.2 Reduce noise impacts within San Mateo County through noise/land use compatibility and noise mitigation.
- 16.3 Promote measures which: (1) protect noise-sensitive land uses, (2) preserve and protect existing quiet areas, especially those which contain noise-sensitive land uses, and (3) promote noise compatibility in Noise Impact Areas.
- 16.5 Promote noise reduction along the path and at the receiver through techniques which can be incorporated into the design and construction of new and existing development including, but not limited to, site planning, noise barriers, architectural design, and construction techniques.
- 16.17 Promote measures which reduce transportation-related noise, particularly aircraft and vehicle noise, to enhance the quality of life within San Mateo County.
- 16.19 Promote measures which incorporate noise control into the design of County roadway projects. Roadway noise abatement may include smooth road surface and noise barriers.

The current San Mateo County General Plan does not specify compatible noise levels for various land use types.

[7] Traffic noise along roadways in the vicinity of the project area other than Middlefield Road were not modeled as the traffic volume increases along those segments were minimal (Traffic Impact Study, AECOM 2018). Typically, a doubling of resulting in negligible traffic noise increase.

Noise emissions in the County are primarily regulated by Chapter 4.88 – Noise Control of the San Mateo County Ordinance Code (County Code). For single or multi-family residences, schools, hospitals, churches, or public library properties, the daytime exterior noise level standard (effectively 55 dBA hourly L_{50}) and interior noise level standard (effectively 45 dBA hourly L_{50}) are contained in Sections 4.88.330 and 4.88.340, respectively. Construction activities are exempted from the above noise limitations, provided construction complies with the requirements of Section 4.88.360. Specifically, construction activities are prohibited between 6:00 PM and the following 7:00 AM on weekdays and between 5:00 PM and the following 9:00 AM on Saturdays. Construction is not allowed on Sundays, Thanksgiving, and Christmas.

The FTA has developed a manual providing guidance for preparing vibration sections of environmental documents. With respect to human annoyance, the FTA's established maximum acceptable vibration thresholds is (80 VdB) for residential and (83 VdB) for institutional land uses with primarily daytime operations. For structural damage, FTA uses a construction vibration limit of 0.5 in/sec peak particle velocity (PPV) for reinforced concrete, steel, or timber buildings (no plaster), 0.3 in/sec PPV for engineered concrete and masonry buildings (no plaster), 0.2 in/sec PPV for non-engineered timber and masonry buildings, and a limit of 0.12 in/sec PPV for buildings that extremely susceptible to vibration damage. The conservative building damage limit of 0.2 in/sec PPV is used in this discussion.

Sources:

California Department of Transportation (Caltrans), 2013. (September). Technical Noise Supplement to the Traffic Noise Analysis Protocol. Available online at: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf

San Mateo County, 1986. General Plan, Chapter 16 – Man-Made Hazards Policies. Approved by Board of Supervisors, November 18, 1986. Available online: http://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/GP%20Ch%2016-Man-Made%20Hazards%20Policies.pdf

San Mateo County. San Mateo County Zoning (Unincorporated Areas). Available online: https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/smc_zoning.pdf

San Mateo County Ordinance Code, Chapter 4.88 – Noise Control. Available online: https://library.municode.com/ca/san_mateo_county/codes/code_of_ordinances?nodeId=TIT4SAHE_CH4.88NOCO_4.88.120FINOSODE

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
12.a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Discussion:

The Project would be subject to noise-related regulations, plans, and policies established by San Mateo County, specifically the San Mateo County General Plan and the San Mateo County Municipal Code. These documents, and the FTA guidance, form the basis of the significance criteria used to assess Project impacts.

Construction:

The Project would generate temporary and short-term construction noise from equipment operating in the Project area, and from the transport of construction equipment, materials, and workers to and from the construction sites.

As discussed in the Regulatory Framework above, the County Code provides exemptions for noise sources associated with demolition, construction, repair, remodeling, or grading, provided that

construction activities occur during specified periods. The Project would comply with the applicable regulations in the County Code relating to timing of construction activities; therefore, there are no applicable noise level standards for construction noise. Further discussion of construction equipment-generated noise in relation to ambient noise levels is provided in Item 12.d below.

Construction of the Project would also result in additional vehicle trips on the local roadway network as workers commute and equipment and materials are transported, which are not subject to the exemption discussed above. Construction-related traffic volumes for the Project were conservatively assumed to be 30 truck trips and 25 worker trips during the peak hour period. Project-related construction traffic noise levels were estimated (as summarized in **Table 4.12-1**) using the FHWA's Roadway Noise Model (FWHA RD-77-108) at 50 feet. More detailed construction traffic noise estimates for individual roadway segments are provided in Table 2 of Appendix C. Noise-sensitive land uses include residential properties within 50 feet from the centerline of the routes assumed for hauling material and workers commute. As shown in **Table 4.12-1**, the estimated increase in noise levels from Project construction traffic would be 0.1 to 0.2 dB at the nearest noise-sensitive uses. Noise increases of less than 3 dBA are widely accepted to be imperceptible; therefore, construction traffic noise impacts would be less than significant.

Table 4.12-1. Summary of Existing Traffic Noise Levels and Construction Traffic Noise Levels

Sections of Middlefield Road	Existing noise level (L_{eq}, dBA at 50 feet)	Existing plus construction traffic noise level (L_{eq}, dBA at 50 feet)	Increase in noise level due to construction traffic (L_{eq}, dBA at 50 feet)
North of Douglas Avenue	67.3 to 67.7	67.5 to 67.8	0.1 to 0.2
Between Douglas and 6th Avenues	66.5 to 67.5	66.7 to 67.6	0.1 to 0.2
South of 6th Avenue	66.4 to 68.5	66.0 to 68.6	0.1 to 0.2

Notes: dB = A-weighted decibels; L_{eq} = equivalent noise level.
Source: Appendix C; using FHWA's Roadway Noise Model (FWHA RD-77-108) FHWA 1978.

Operation:

For single or multi-family residences, schools, hospitals, churches, or public library properties, the County's Municipal Code restricts operational noise to 55 dBA L_{50} between the hours of 7:00 a.m. and 10:00 p.m, and 50 dBA L_{50} between the hours of 10:00 p.m. and 7:00 a.m. at all residential property lines. However, when existing background sound levels already exceed these limits, the County's Municipal Code allows the operation noise limit to be adjusted upwards incrementally by 5 dBA until they are greater than the background sound level. Hence, for the apparent ranges of existing noise level shown in Table 4.12-1, the daytime (7:00 a.m. to 10:00 p.m.) threshold would be 70 dBA.

The proposed utility undergrounding and sewer replacement components of the Project would not create any operational noise. The proposed roadway improvements would result in a change of traffic flow and volumes, and consequently, a change in operational traffic noise. In general, noise levels would be expected to decrease along Middlefield Road, because the Project would reduce the number of travel lanes, and therefore would be expected to decrease traffic volumes.

To assess traffic noise impacts on existing noise-sensitive uses, traffic noise levels under existing, 2020 and 2050 conditions with and without the Project were estimated for affected roadway segments. Project-related operational traffic noise levels were estimated using the FHWA's Roadway Noise Model (FWHA RD-77-108) at 50 feet, and using the estimated traffic volume data prepared for the Project (Appendix C). **Table 4.12-2** summarizes the estimated operational traffic noise levels at 50 feet from the centerline of Middlefield Road under existing conditions and with Project implementation. More detailed operational noise modeling results are provided in Table 3 of Appendix C. Noise-sensitive land uses, including residential properties, are not located within 50 feet of the centerline of Middlefield Road, and the modeled roadway noise levels assume no natural or artificial shielding. Therefore, these estimates should be considered conservative (potentially overestimating impacts).

As shown in **Table 4.12-2**, the existing traffic noise levels along Middlefield Road already exceed 65 dBA, and would increase slightly under No Build conditions (i.e., without the Project) by up to 0.1 dB in 2020, and by up to 1.2 dB in 2050. However, traffic noise levels along Middlefield Road under the 2020 Build condition (i.e., with the Project) would decrease compared to both the existing conditions and the 2020 No Build conditions. Traffic noise levels along Middlefield Road under the 2050 Build condition (i.e., with the Project) would increase slightly (by 0.3 to 0.6 dB) compared to existing conditions, but would decrease compared to the 2050 No Build conditions. Because changes in noise levels of less than 3 dB are widely accepted to be imperceptible to the average human ear, operation of the Project would have a less-than-significant impact on traffic noise levels in the Project vicinity.

Table 4.12-2. Operational Noise Levels Along Middlefield Road from Vehicular Traffic in the Project Area and the Vicinity

Sections of Middlefield Road	Traffic Noise Level (L_{dn}, dBA) @ 50 Feet					
	Existing Noise	2020 No Build	2020 Build	2050 No Build	2050 Build	Maximum Project Impact
North of Douglas Avenue	66.9 to 67.2	66.9 to 67.2	66.2 to 66.6	67.9 to 68.5	67.2 to 67.8	Up to 0.6 increase over existing
Between Douglas and 6th Avenues (i.e., within Project area)	66.1 to 67.2	66.1 to 67.2	65.2 to 66.4	66.2 to 67.4	65.2 to 66.5	At least a 0.5 dB decrease compared to existing
South of 6th Avenue	65.3 to 68.1	65.4 to 68.1	63.9 to 67.4	65.7 to 68.3	63.5 to 67.2	At least a 0.7 dB decrease compared to existing
Comparison		No or very minimal (<0.1) increase compared to Existing	Decrease compared to both Existing and 2020 No Build	Slight increase (1.1 to 1.2) compared to Existing	Very slight increase (0.3 to 0.6) compared to Existing; Decrease compared to 2050 No Build	

Notes: dB = A-weighted decibels; L_{eq} = equivalent noise level.
Note that existing noise in this table is expressed in L_{dn} dBA, whereas Table 4.12-1 shows existing noise levels in L_{eq} dBA.
More detailed modelling results (by individual road segment) is contained within Table 3 of Appendix C.
Source: FHWA 1978, Appendix C

Traffic noise along the other roadway segments in the vicinity of the Project area were not modeled as part of this analysis, because the predicted traffic volume increases on surrounding roadway segments were found to be minimal (Appendix D). Traffic volumes generally must increase by 100 percent for their noise level to increase by 3 dBA. The anticipated Project-related increase in traffic volumes along roadways in the vicinity of the Project area as a result of diverted or cut-through traffic would be substantially less than 100 percent. Therefore, the Project would not result in a perceptible increase in traffic noise increase on roadways surrounding the Project area.

Based on the above assessment, the Project improvements and resulting change in traffic patterns and volumes would not substantially increase the area noise levels (as compared to existing conditions) and would not result in noise levels that exceed the background-adjusted exterior daytime threshold of 70 dBA. Thus, the Project would not generate noise levels in excess of County Code standards and this impact is less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

County of San Mateo, 2017. Code of Ordinances. Accessed October 26, 2017 at: https://library.municode.com/ca/san_mateo_county/codes/code_of_ordinances?nodeId=TIT4SAHE_CH4.88NOCO_4.88.120FINOSODE.

Federal Highway Administration (FHWA) 1978. Accessed November 17, 2017, at: https://ntl.bts.gov/lib/57000/57600/57638/fhwahighwaytraff00barr.pdf

San Mateo County Code – Noise control. Accessed October 26, 2017, at: https://library.municode.com/ca/san_mateo_county/codes/code_of_ordinances?nodeId=TIT4SAHE_CH4.88NOCO_4.88.120FINOSODE

Would the project: 12.b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☒	☐	☐

Discussion:

Construction:

Construction-related vibration would result from the use of heavy earth-moving equipment for area clearing, excavation, and grading. These activities would be expected to produce a vibration level of up to approximately 87 VdB (0.089 inches per second PPV) at a distance of 25 feet, which is the reference vibration level for operation of a large bulldozer or a hoe ram (FTA 2006). The distance between proposed construction activities and the closest acoustically-sensitive uses (residential structures) would be approximately 50 feet, because excavation of the proposed utility joint trench would extend along cross streets up to 340 feet away from Middlefield Road. Assuming a standard reduction of 9 VdB per doubling of distance (FTA 2006), the Project-related construction vibration level at these nearest residential receivers would be approximately 78 VdB (0.032 inches per second PPV). This level of vibration is below the FTA's established maximum acceptable vibration thresholds for residential (80 VdB) and institutional land uses with primarily daytime operations (83 VdB) and would not likely be perceptible. Therefore, this construction vibration impacts would be less than significant.

For commercial land use structures along east and west sidewalks of Middlefield Road, the distance between vibration source and receiving building façade may be much closer because the sidewalks are proposed to be modified as part of the Project. Based on the aforementioned guidance threshold of 0.2 in/sec PPV and vibration propagation estimation per FTA guidance, the Project would have a potentially significant impact if large equipment like a hoe ram or bulldozer were operated within 15 feet of existing building facades, or if jackhammers (reference PPV level of 0.035 in/sec at 25 feet per FTA), were operated within 8 feet of existing building facades. Mitigation Measure NOI-1 would require the use of smaller equipment and low-vibration concrete-cutting methods, such as waterjetting, within close proximity to existing facades to reduce construction vibration impacts.

Mitigation Measure NOI-1: Limitations on Construction Activities Generating Excessive Vibration. *The County shall include the following measures in its contractor specifications, and such measures shall be implemented by the Contractor(s) during construction:*

a) Operation of construction equipment shall be prohibited within the following specified distances of adjacent building facades, per the following categories, unless the precautions in subsection (b) below are implemented:

- *15 feet for large bulldozers (and comparable large mobile equipment/vehicles having a reference PPV of 0.089 inches per second at 25 feet, per FTA guidance);*
- *8 feet for jackhammers (and comparable portable vibratory equipment having a reference PPV of 0.035 inches per second at 25 feet, per FTA guidance); and*

- *D feet for any other vibratory equipment having a reference PPV of X inches per second vibration velocity at 25 feet, that satisfies the following expression: 0.2 inches per second = X * (25/D)^1.5.*

b) *If the restrictions within subsection (a) above cannot be achieved, the following measures shall be implemented by a qualified professional:*

- *Pre-construction inspections of the facades of adjacent buildings within the specified distances to document pre-construction conditions.*

- *Daily inspections of the facades of adjacent buildings during use of heavy or vibratory equipment within the specified distances, to document any construction-related vibration damage.*

- *If any construction-related damage is observed, work within the specified distances shall be suspended immediately, and shall not be resumed until a vibratory mitigation monitoring plan is prepared by a qualified professional, and the recommendations of the plan are implemented by the Contractor to limit the likelihood of further damage. The Contractor shall be responsible for repairing any construction-related vibratory damage to building facades to pre-construction conditions.*

With implementation of Mitigation Measure NOI-1, the Project would not result in generation of excessive groundborne vibration, and the impacts from construction activities would be reduced to a less-than-significant level.

Construction would also result in additional vehicle trips on the local roadway network as workers commute and equipment and materials are transported. Heavy truck traffic can generate ground-borne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, ground-borne vibration levels generated by rubber-tired vehicular traffic are not typically perceptible outside the road right-of-way (FTA 2006); therefore, the impact from construction-related traffic would be less than significant.

Operation:

The proposed utility undergrounding and sewer replacement components of the Project would not create any operational vibration; therefore, these Project components would result in no impact. Project operation would, however, result in a change of vehicular traffic flow and volumes, due to the proposed changes in roadway layout. However, ground-borne vibration levels generated by rubber-tired vehicular traffic are not typically perceptible outside of the road right-of-way (FTA 2006). Therefore, this impact would be less than significant.

Conclusion:

With adherence to Mitigation Measure NOI-1, construction-related impacts would be less than significant. Operational impacts would be less than significant.

Sources:

Federal Transit Administration (FTA). 2006. Accessed October 26, 2017, at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
12.c. A significant permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐

Discussion:

Consistent with the County's Municipal Code, the Project would be considered to result in a significant impact if the Project would permanently increase existing noise levels by 5 dBA or more, when they already exceed the applicable threshold (e.g., an hourly 55 dBA L_{50} during daytime hours for residential land uses).

Construction:

Construction of the Project would involve temporary and short-term construction activities, and would not introduce any permanent construction noise sources. Therefore, this threshold is not applicable to Project construction.

Operation:

The proposed roadway improvements would result in a change of traffic flow and volumes, and consequently, a change in traffic noise. The proposed utility undergrounding and sewer replacement components of the Project would not create any operational noise.

As previously discussed under Item 12.a above, and illustrated in **Table 4.12-2**, noise levels along Middlefield Road would not increase substantially over the existing traffic noise as a result of Project operational traffic. Implementation of the Project would generally result in a decrease compared to existing noise levels or 2020 No Build conditions. Compared to 2050 No Build conditions, the Project would result in a less than 1 dB increase in traffic noise levels, which is considered imperceptible. As such, Project operation would have a less-than-significant impact on permanent ambient noise levels.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project: 12.d. A significant temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☒	☐	☐

Discussion:

Construction:

As discussed above, the Project would generate temporary and short-term construction noise from equipment operating in the Project area, and from the transport of construction equipment, materials and workers to and from the site. Item 12.a evaluated construction noise with regard to applicable local limits contained in the San Mateo County Municipal Code. The discussion below evaluates the noise impacts resulting from Project construction activities compared to ambient noise conditions. Typically, construction activities would be considered to result in a significant temporary noise increase if construction-related noise levels are anticipated to exceed the ambient or existing noise levels by 5 dBA or more at nearby noise-sensitive receptors.

Project-related construction noise levels were estimated using the FHWA Roadway Construction Noise Model (FHWA 2006) and a list of heavy equipment anticipated to be used during construction.

As shown in **Table 4.12-1** above (and discussed in more detail under Item 12.a), the increase in noise levels produced by construction traffic associated with the Project would be 0.1 to 0.2 dB at the nearest noise-sensitive uses, which would be imperceptible.

As shown in **Table 4.12-3**, the unmitigated noise levels produced by anticipated construction equipment for the Project are listed for a reference distance of 50 feet. There are existing noise-sensitive uses within 50 feet of the Middlefield Road centerline in the Project area.

Table 4.12-3.Construction Equipment Noise Levels

Typical Construction Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	L_{eq} dBA at 50 feet[2]
Backhoe	80	76
Jack-Hammer	85	78
AC Saw Cut	90	83
Dump Truck	84	80
Electrical Generator	82	79
Skid Loader	80	76
Concrete Truck	82	75
Asphalt Truck	80	73
Compactor/Roller	85	78

Notes: dB = A-weighted decibels; L_{eq} = equivalent noise level; L_{max} = Maximum instantaneous noise level.
[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.
[2] Based on the Federal Transit Noise and Vibration Impact Assessment, 2006.
Source: Appendix C.

The dominant ambient noise source in the Project area would be vehicular traffic along Middlefield Road. As shown in **Table 4.12-1**, existing traffic noise levels[8] along Middlefield in the Project area (from Douglas Avenue to 6th Avenue), range from 66.5 dB L_{eq} to 67.5 dB L_{eq} at 50 feet from the centerline of Middlefield Road.

Using reference data from **Table 4.12-3**, the estimated worst-case Project-related construction noise level could be as high as 85 dBA L_{eq} at 50 feet assuming (in a manner similar to FTA general assessment guidance for construction noise prediction) that the two loudest equipment—concrete sawing and an operating dump truck--would be in operation as close as 50 feet from the receptor. Roadway surface cutting on the cross-streets with Middlefield Road would exemplify such conditions, and could thus cause outdoor noise to rise above existing ambient sound levels by nearly 20 dBA. This increase in ambient noise conditions would be a significant impact unless mitigated to a level where the increase over ambient noise would be less than 5 dBA for such temporary noise generated by construction activity. Mitigation Measure NOI-2 would reduce noise impacts during construction by requiring use of noise-reduction devices on construction equipment, selecting and/or locating construction noise sources to minimize impacts on surrounding sensitive receptors, and installing temporary noise-occluding barriers.In sum, proper implementation of these measures would be expected to yield the needed 15 dBA of noise reduction.

> ***Mitigation Measure NOI-2:*** *The County shall include the following measures in its contractor specifications, and such measures shall be implemented by the contractor(s) during construction:*
>
> - *Per San Mateo County's Municipal Code, construction activities shall be limited to the hours of 7 a.m. to 6 p.m. on weekdays, 9:00 am to 5:00 pm on Saturdays. Construction activities are prohibited at any time on Sundays, Thanksgiving, and Christmas.*
> - *Provide written notification of construction activities and schedule to all noise-sensitive receptors adjacent to the Project area. The notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the Project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall be included in the notification.*
> - *Prohibit unnecessary idling of internal combustion engines. Equip all equipment driven by internal combustion engines with mufflers which are in good mechanical condition,*

[8] More detailed modeling results for existing conditions are presented in Table 1 of Appendix B.

appropriate for the equipment, and no less effective that those originally installed by the manufacturer.

- *Utilize "quiet" air compressors and other stationary noise sources where technology exists. Use electrically powered equipment instead of internal combustion equipment where practicable and feasible.*
- *Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors and place equipment so that emitted noise is directed away from nearby sensitive receptors.*
- *Construct temporary noise barriers, where feasible, to screen stationary noise-generating equipment when located within 200 feet of adjoining sensitive land uses. Temporary noise barrier fences would provide a 5-15 dBA noise reduction if the noise barrier interrupts the line-of-sight between the noise source and receiver and if the barrier is constructed in a manner that eliminates any cracks or gaps.*
- *Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the Project area.*
- *Equip concrete saws (or similar portable/mobile equipment) with modern noise-reducing blades; and install sound-absorptive and sound-blocking shrouds or temporary barriers (e.g., curtains or blankets suspended from portable field-erected framing systems, such as EchoBarrier or comparable commercially-available products and assemblies) that can be readily moved—and thus stay in proximity to the concrete saw—as work progresses to different locations on the Project area.*
- *Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.*

With implementation of Mitigation Measure NOI-2, construction of the Project would not result in substantial temporary or periodic increase in noise levels above ambient conditions. Construction noise impacts associated with Project development would, therefore, be reduced to a less-than-significant level.

Operation:

Project operation would not introduce any sources of temporary or periodic noise to the Project area. The proposed roadway improvements would result in a change of traffic flow and volumes, and consequently, a change in traffic noise, as discussed in Items 12.a and 12.d, which is considered a permanent noise source, not temporary or periodic. The proposed utility undergrounding and sewer replacement components of the Project would not create any operational noise. As such, there would be no impact from Project operation in relation to temporary or periodic increases in ambient noise levels.

Conclusion:

With adherence to Mitigation Measure NOI-2, construction-related impacts would be less than significant. There would be no operational impacts.

Sources:

Federal Highway Administration (FHWA). 2006. Accessed October 26, 2017, at: http://www.gsweventcenter.com/Draft_SEIR_References/2006_01_Roadway_Construction_Noise_Model_User_Guide_FHWA.pdf.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
12.e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

The Project area is not located within an airport land use plan area, or within two miles of a public airport. The nearest airport to the Project area, San Carlos Airport, is approximately 2.9 miles to the north from the Project area. Therefore, there would be no impact from Project construction or operation with regard to exposing people residing or working in the vicinity of the Project area to excessive noise levels related to private airstrips.

Conclusion:

The Project would have no impact.

Sources:

San Mateo County General Plan. Accessed October 26, 2017, at:
http://planning.smcgov.org/sites/planning.smcgov.org/files/SMC-GP%201986.pdf

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
12.f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

There are no private airstrips in the vicinity of the Project area. Therefore, there would be no impact from Project construction or operation with regard to exposing people residing or working in the vicinity of the Project area to excessive noise levels related to private airstrips.

Conclusion:

The Project would have no impact.

Sources:

San Mateo County General Plan. Accessed October 26, 2017, at:
http://planning.smcgov.org/sites/planning.smcgov.org/files/SMC-GP%201986.pdf

4.13. Population and Housing

Environmental Setting:

According to the US Census, 707,161 people were living in San Mateo County in 2000. In 2010, the population grew to 718,451 people, a 1.6 percent increase. The 2016 population was estimated at 764,797, a 6.5 percent increase from 2010.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
13.a. Induce substantial 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)?	☐	☐	☐	☒

Discussion:

Construction:

Construction of the Project would bring workers to the Project area to perform construction activities. The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). Due to its proximity to large urban centers, the Project would be expected to draw from the existing local workforce, so that temporary working housing would not be required. For these reasons, there would be no impacts related to housing or population growth during construction.

Operation:

The Project is not expected to directly or indirectly induce significant population growth in the area. The Project would not result in the construction of additional housing or commercial or industrial businesses, nor would it remove any obstacle to population growth. Typical growth inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or underserved area, or the removal of major barriers to development. While the Project would improve a portion of Middlefield Road and provide for amenities such as bike lanes, benches, landscaping, trash receptacles, and public spaces, it would not be extending the road or adding other transportation infrastructure that could bring more growth to or remove barriers to growth in the area. The Project would result in a reduction in the number of traffic lanes on Middlefield Road and therefore would not increase traffic capacity. Thus, the Project would not induce significant population growth in the area.

Conclusion:

The Project would have no impact.

Sources:

United States Census Bureau, 2000. United States Census Bureau data for 2000 for San Mateo County.

United States Census Bureau, 2010. United States Census Bureau data for 2000 for San Mateo County.

United States Census Bureau, 2016. United States Census Bureau data for 2000 for San Mateo County.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
13.b. Displace existing housing (including low- or moderate-income housing), in an area that is substantially deficient in housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

The Project would include the improvement and reconfiguration of the existing roadway and sidewalks, as well as undergrounding of existing overhead utilities and replacement of sewer pipelines. Because the Project area is limited to the right-of-way for Middlefield Road, no housing exists where Project improvements would be made. Therefore, the Project would not displace existing housing in the area that would necessitate the construction of replacement housing elsewhere.

Conclusion:

The Project would have no impact.

4.14. Public Services

Environmental Setting:

Fire Protection Services:

Although the Project area is within unincorporated San Mateo County, fire services are provided by

adjacent fire departments and districts including the Menlo Park Fire Protection District (MPFPD) and Redwood City Fire Department (RCFD).

The closest fire station to the Project area is MPFPD's Station 5, located at 4101 Fair Oaks Avenue in Menlo Park, approximately 0.7 mile east of the Project area. Station 5 serves the North Fair Oaks area of the fire district and unincorporated areas near Redwood City. Station 5 is a single company station that is manned by three personnel comprised of a Captain and 2 Firefighters with one of the three personnel a licensed paramedic providing Advanced Life Savings capabilities (MPFPD2017). In 2015, MPFPD responded to 815 calls for service from Station 5. Of those calls, 499 were for emergency medical services (MPFPD 2015).

RCFD's Station 11 is approximately 0.8 mile north east of the project site, at 1091 Second Ave in Redwood City. The station's service area is roughly bordered by Woodside Road, Marsh Road, Middlefield Road and East Bayshore. Station 11 is staffed with a captain, a firefighter and a firefighter/paramedic (RCFD 2018).

Police Protection Services:

The San Mateo County Sheriff's Office provides police protection services to the Project area. The Sheriff's Office deploys officers from five patrol bureaus. The Project area is located in the Headquarters Patrol Bureau, which serves North Fair Oaks, Portola Valley, and Woodside. The San Mateo County Sheriff's deputy-to-population ratio is approximately 1 deputy per 1,000 people (San Mateo County 2011).

Three patrol units are on duty in North Fair Oaks, 24 hours a day, 7 days a week. The bureau provides a full range of law enforcement services with 28 Deputy Sheriff's, four Sergeants, one Lieutenant, two full-time and two part-time Community Service Officers, and two School Resource Officers (San Mateo County Sheriff's Office 2017). The Headquarters Patrol Bureau has one substation located within the Project area at 3121 Middlefield Road (San Mateo County Sheriff's Office 2017).

Schools:

Everest Public High School at 455 Fifth Avenue (approximately 500 feet west of Middlefield Road) serves grades 9 through 12, and is a public charter school operated by Summit Public Schools. Redwood City School District operates three schools within a half mile of the Project area: Garfield Community School, serving grades K through 8, is approximately 500 feet south of the Project area at 3600 Middlefield Road (at Eighth Avenue); Fair Oaks Elementary School (serving grades TK through 8) is approximately 1,200 feet to the east; and Hoover Elementary School (serving grades K through 8), is approximately 1,300 feet to the north.

Parks:

The closest park to the Project area is Hoover Park, at 2100 Spring Street, Redwood City, approximately 1500 feet north of the Project area. The park is owned and operated by Redwood City Parks Department and contains soccer and baseball fields, basketball courts and two outdoor pools.

Other Public Facilities:

The Fair Oaks Health Center at 2710 Middlefield Road is operated by the San Mateo County Health System, and provides primary care, women's health, dental, podiatry, optometry, nutrition, and mental health services (San Mateo County Health 2018). Access to the Health Center is provided from Middlefield Road near the railroad crossing.

Sources:

Menlo Park Fire Protection District (MPFPD). 2015. Menlo Park Fire Protection District 2015 Annual Report. Available: https://evogov.s3.amazonaws.com/media/6/media/48314.pdf, accessed on October 2017.

_____. 2017. Station 5. Available: https://www.menlofire.org/station-5, accessed on October 2017.

Redwood City Fire Department (RCFD). 2018. Fire Stations. Available

http://www.redwoodcity.org/departments/fire-department/about-the-department/fire-stations, accessed July 11, 2018.

San Mateo County. 2011 (August). Draft Environmental Impact Report for Proposed North Fair Oaks Community Plan Update. Available: http://planning.smcgov.org/north-fair-oaks-community-plan, accessed on October 2017.

San Mateo County Health. 2018. Fair Oaks Health Center. Available: https://www.smchealth.org/location/fair-oaks-health-center. Accessed October 2017.

San Mateo County Sheriff's Office. 2017. Headquarters Patrol Bureau. Available: http://www.smcsheriff.com/patrol-services/headquarters-patrol-bureau, accessed October 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
14.a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (i) Fire protection?	☐	☐	☒	☐

Discussion:

Construction:

Construction of the Project would result in a temporary increase in the demand for fire suppression and emergency medical services due to construction activities and the presence of construction personnel in the Project area. First response to the Project area would be provided by the MPFPD Station 5 or RCFD Station 11, each of which are within a mile of the Project area (MPFPD 2017; RCFD 2018).

During construction, federal and State fire prevention and worker safety regulations would be adhered to, in order to minimize the likelihood of fire and workplace injuries and accidents. Typical fire and safety precautions would be taken, such as, prohibiting on-site fires; reporting any fires, even if they have been extinguished; discarding any smoking materials in approved containers; maintaining access to emergency vehicles; and maintaining access to fire hydrants and emergency turnouts. Such activities would reduce the dependence on the Menlo Park Fire District by reducing fire hazards and the potential for workplace accidents.

As discussed further in Section 4.16, "Transportation and Traffic," construction of the Project would involve temporary lane closures, detours, and other traffic control measures that could cause temporary, localized congestion in and around the Project area during the construction period. Such measures could slow or interfere with emergency vehicles, temporarily increasing response times and impeding existing services on Middlefield Road and other roadways in the vicinity of the Project area. However, construction activities would be temporary and construction phasing would maintain at least one lane in each direction at all times. Therefore, Project construction would not necessitate the provision of additional fire protection facilities order to maintain acceptable service ratios, response times or other performance objectives for fire services.

Construction workers would not relocate to the Project area from other areas in the County. Therefore, construction of the Project would not increase the demand for fire protection and emergency medical services as a result of population growth.

Construction of the Project would not result in the construction of new or expanded fire protection facilities or permanently affect emergency response times. The construction-related impact would be less than significant. Impacts of construction on emergency access are discussed under Item 16.e in Section 4.16

below.

Operation:

The Project would not increase the population in the Project area as a result of new housing or employment opportunities and thus would not result in an increase in calls for service from the fire protection district. In addition, the Project would not involve the construction of any structures that would require additional fire protection services.

The MPFPD has previously indicated to the County Department of Public Works that Middlefield Road is an important route for emergency vehicles, and has expressed concern that if Project operation resulted in substantial slowdown of through traffic on Middlefield Road, emergency vehicles may need to divert to nearby local streets, which would likely result in delayed response times due to the narrowness of the surrounding streets and the presence of on-street parking. Concern was also expressed regarding the potential for widened sidewalk widths to impact the ability of fire apparatus to reach adjacent structures with ladders.

While the Project would remove one through lane in each direction along Middlefield Road, it would also create a continuous 11-foot-wide two-way center left-turn lane, which could be used by fire and emergency vehicles to bypass other traffic. In addition, the 6.5-foot-wide buffered bicycle lanes in each direction would provide additional space for vehicles to pull out of the primary travel lane to make way for overtaking emergency vehicles, if necessary. No raised medians (which could obstruct emergency vehicles attempting to overtake other traffic) are proposed within the Middlefield Road ROW, with the exception of median islands proposed at the Dumbarton Branch railroad crossing (where they would be needed to deter motorists from detouring around crossing gate arms during train movements). While corner bulb-outs are proposed at many of the intersections within the Project limits, a minimum curb-to-curb width of 45 feet across Middlefield Road would be maintained at these locations, which exceeds the County's requirement for an unobstructed roadway width of at least 20 feet for fire apparatus access (Fire Safe San Mateo 2018). Larger emergency vehicles, such as ladder/aerial trucks, would generally have steerable rear axles and would be able to use the two-way center left-turn lane along Middlefield Road (as well as opposing lanes along both Middlefield Road and side streets) when making turns into and out of narrower side streets.

While the Project would include wider sidewalks than are currently provided along Middlefield Road, the existing angle parking would also be converted to parallel parking, such that fire apparatus would be a similar distance from building facades if parked within the travel lane or bike lane.

Therefore, operation of the Project would not significantly affect fire service response times or other performance objectives and would not result in the construction of new or expanded fire protection facilities. Operational impacts would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

Fire Safe San Mateo. 2018. *Fire Codes*. Accessed March 6, 2018 at https://www.firesafesanmateo.org/resources/fire-codes.

Menlo Park Fire District. 2017. Station 5. Accessed October 25, 2017 at: https://www.menlofire.org/station-5.

Redwood City Fire Department (RCFD). 2018. Fire Stations. Available http://www.redwoodcity.org/departments/fire-department/about-the-department/fire-stations, accessed July 11, 2018.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
14.a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (ii) Police protection?	☐	☐	☒	☐

Discussion:

Construction:

Construction of the Project would result in a temporary increase the demand for police protection services. Typical crime and safety issues during construction could include trespassing, theft of materials, and vandalism. The Project area would be adequately fenced and secured at night to deter unlawful entry. In addition, construction activities would be temporary and crime and safety issues associated with construction do not generally place undue demands on law enforcement services.

The Headquarters Patrol Bureau has one substation within the Project area at 3121 Middlefield Road between Third and Fourth Avenues. As discussed previously under Item 14.a.i above, construction activities may reduce emergency access and response times (including for police) within and in the vicinity of the Project area through obstruction of roadways by construction vehicles and lane closures. However, construction activities would be temporary and construction would be phased such that one lane would be maintained in each direction at all times. As such, Project construction would not necessitate the provision of additional police protection facilities order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

Construction workers would not relocate to the Project area from other areas in the County. Therefore, construction of the Project would not result in additional population that could require additional staff to maintain the deputy-to-population service ratio or result in the construction of new or expanded police protection facilities.

Operation:

The Project would not add residents to the Project area; therefore, the Project would not result in new population that would require additional staff to maintain the deputy-to-population service ratio. Therefore, operation of the Project would not affect the San Mateo County Sheriff's performance objectives and would not result in the construction of new or expanded police protection facilities.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
14.a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (iii) Schools?	☐	☐	☒	☐

Discussion:

Construction:

The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18

months). It is not anticipated that workers would relocate to the Project area from other areas in the County, and therefore there would be no increase enrollment in local schools. As such, construction of the Project would not require new or physically altered school facilities.

Operation:

The Project would not provide new housing that generates students for local schools. Therefore, operation of the Project would not require new or physically altered school facilities.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
14.a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (iv) Parks?	☐	☐	☒	☐

Discussion:

Construction:

The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). It is not anticipated that workers would relocate to the Project area from other areas in the County, so that there would be no increase in the use of existing parks. In addition, construction of the Project would not increase the population of the Project area such that construction of new parks is required to meet the County's parkland standard.

Operation:

The Project would not increase the population in the Project area as a result of new housing or employment opportunities. Therefore, operation of the Project would not increase the use of existing parks or require construction of new parks to meet the County's parkland standard.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
14.a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (v) Other public facilities?	☐	☐	☒	☐

Discussion:

Construction:

The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). As a result, workers would not be expected to relocate to the Project area from other areas in the County. Therefore, construction of the Project would not increase demand for other public facilities.

Access to the Fair Oaks Health Center would be maintained during construction.

Operation:

The Project would not increase the population in the Project area as a result of new housing or employment opportunities. Therefore, operation the Project would not increase demand for other public facilities. Access to the Fair Oaks Health Center would be improved as part of the Project, through modifications to the Health Center driveway and improved control of traffic movements in the vicinity of the Health Center driveway and railroad crossing.

Conclusion:

The Project would have no impact.

4.15. Recreation

Environmental Setting:

The Project area is in the North Fair Oaks Community of the County of San Mateo. Flood Park is a 21-acre County park approximately 2 miles from the Project area. The City of Redwood City provides other nearby parks to the Project area, including Andrew Spinas Park, Linden Park, Fleishman Park, Hoover Park, Jardin de Ninos Park, Main Street Park, Hawes Park, and Palm Park.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
15.a. Increase the use of existing neighborhood or regional parks or other recreational facilities such that significant physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

Discussion:

Construction:

The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). As a result, workers would not be expected to relocate to the Project area from other areas in the County, and therefore, there would be no increase in use of existing parks or recreational facilities during construction that might cause or accelerate physical deterioration of these facilities.

Operation:

As discussed in Section 4.13, “Population and Housing,” the Project is not expected to result in population growth or induce population growth, and, consequently, there would be no increase in the use of recreational facilities and parks. The Project would not increase the population in the Project area as a result of new housing or employment opportunities, and would not improve access or expand utility capacity that could attract substantial new development or increase the intensity of existing uses.

The Project would add buffered bike lanes to approximately 2,900 feet of Middlefield Road, which could encourage more bicycling by nearby residents due to improved safety along the Project corridor. These improvements could therefore slightly increase the use of existing bicycle routes along adjacent sections of Middlefield Road (north and south of the Project area) or other connecting routes. The addition of buffered bike lanes to Middlefield Road is not expected to accelerate or cause the physical deterioration of existing bike lanes or other bicycle-related recreational facilities. Thus, the Project would not cause an increased use of recreational facilities that would accelerate their physical deterioration.

Conclusion:

The Project would have no impact.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
15.b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

Construction:

The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). It is not anticipated that workers would relocate to the Project area from other areas in the County, and therefore, the construction or expansion of recreational facilities would not be required. While the Project would involve the construction of new recreational facilities (i.e., buffered bike lanes), the impacts of such construction are addressed throughout this Initial Study as part of the proposed roadway improvements. Thus, there would be no physical impacts on the environment from the construction or expansion of recreational facilities.

Operation:

The Project would not increase the population in the Project area as a result of new housing or employment opportunities. Therefore, operation the Project would not require the construction or expansion of recreational facilities and there would be no impact.

Conclusion:

The Project would have no impact.

4.16. Transportation and Traffic

Environmental Setting:

This section describes existing and future transportation and traffic conditions for the Project, and is partially based on the Traffic Operations Analysis Report (traffic study) conducted for the Project (AECOM 2018, included as Appendix D).

As described in Section 2, “Project Description,” the proposed roadway improvements would occur along an approximately 2,900-foot-long section of Middlefield Road, from Pacific Avenue in the north to Fifth Avenue in the south. In addition, the Project would also include sewer line replacement and utility undergrounding extending slightly further to the north and south, from Douglas Avenue to Sixth Avenue.

The traffic study for the Project describes existing conditions and evaluates future conditions (for the Project’s opening year in 2020 and design year in 2050) with and without the Project (AECOM 2018). The following terms are used within this section and the traffic study to describe various geographical extents associated with the Project:

- Project Area: The Project area, as described in Section 2.1 and used throughout this Initial Study, includes the full width of the Middlefield Road ROW from just south of Douglas Avenue (in the north) to just north of Sixth Avenue (in the south), and extends approximately 150 feet along the adjacent ROWs of intersecting streets within this area. It contains all areas where construction or operational activities would occur as part of the Project. The Project area is entirely within an unincorporated area of southeastern San Mateo County in the North Fair Oaks neighborhood, between Redwood City and Atherton.
- Project Limits: This term is used in the traffic study to describe the area within which roadway improvements would be implemented (i.e., from MacArthur Avenue to Fifth Avenue). The Project limits are slightly smaller than the Project area, because they do not include portions of the Project area where only sewer replacement or utility undergrounding would occur (i.e., between Douglas Avenue and MacArthur Avenue at the northern end of the Project, or between Fifth Avenue and Sixth

Avenue at the southern end). The traffic study evaluates all 12 major intersections along Middlefield Road within the Project limits.

- Study Area/Study Limits: This area includes an additional 35 intersections outside of the Project limits which were assessed as part of the traffic study at the County's request to capture any operational impacts outside of the Project limits due to the proposed improvements. The study limits include Middlefield Road between Willow Street and Marsh Road, Fair Oaks Avenue between Douglas Avenue and Fifth Avenue, Spring Street between Charter Street and Fifth Avenue, Bay Road between Charter Street and Marsh Road, Marsh Road between Middlefield Road and Bay Road, and the El Camino Real/Fifth Avenue intersection.

Existing Conditions

Middlefield Road is a major collector street that begins at Veterans Boulevard in Downtown Redwood City (where it connects with Winslow Street) and continues south through North Fair Oaks (unincorporated San Mateo County), Atherton, Menlo Park, and Palo Alto before splitting into Old Middlefield Way and West Middlefield Road in Mountain View. Middlefield Road is oriented in a northwest–southeast alignment (defined here as north–south for ease of reference), roughly paralleling the Caltrain corridor and El Camino Real. Within the study area, Middlefield Road is an important route for automobile traffic and a key corridor for local transit services. Within the Project area, Middlefield Road is also a neighborhood commercial corridor, with a typical cross-section featuring two travel lanes in each direction, with on-street parking (in a mixed configuration of parallel and angled parking) and sidewalks on both sides of the street.

Traffic Control and Railroad Crossings

There are 12 major intersections along Middlefield Road within the Project area, including all 11 intersections with public rights-of-way and one additional intersection with the access road serving the Fair Oaks Health Center (2710 Middlefield Road), the Middlefield Junction site (2700 Middlefield Road), and the Redwood Junction Industrial Park (2682–2694 Middlefield Road). With the exception of the intersection at Fifth Avenue, which is controlled by a traffic signal, all of these intersections are under stop control for side-street traffic (traffic along Middlefield Road is uncontrolled). The Middlefield Road/Douglas Avenue intersection, immediately to the north of the Project area, is also signal-controlled.

The access road serving the Fair Oaks Health Center, Middlefield Junction site, and Redwood Junction Industrial Park is located along the west (southbound) side of Middlefield Road adjacent to a railroad crossing across Middlefield Road. The railroad tracks and ROW at this location are owned by the San Mateo County Transit District.[9] There are currently no scheduled freight or passenger rail services through the crossing, however it is an active rail corridor with the tracks being used approximately twice per month (San Mateo County Transit District 2017a). The crossing features overhead masts and standard railroad "crossbuck" signs, and is equipped with bells, flashing lights, and dual gate arms, but is otherwise uncontrolled. The majority of the access road is within an easement, with the single-track turnout towards Atherton traversing the inbound direction of the access road.

The posted speed limit along Middlefield Road within the Project area is 30 miles per hour.

Bicycle Circulation

There are no designated bikeways along Middlefield Road within the Project area. However, Class III bikeways (shared lanes identified by signage and sharrows) begin immediately north of Douglas Avenue in Redwood City, transitioning to Class II bikeways (bicycle lanes) at Woodside Road. South of the Project area, Class II bikeways (bicycle lanes) are also provided along Middlefield Road beginning just west of Encina Avenue in Atherton. Despite the lack of designated bikeways, Middlefield Road within the Project area serves an important role for bicycle circulation as a major north–south link and a neighborhood

[9] Originally part of the Southern Pacific Railroad, the tracks at this location form one corner of the Redwood Junction wye connecting Southern Pacific's mainline corridor along the Peninsula (now Caltrain) with the Dumbarton branch line traversing San Francisco Bay. The primary railroad right-of-way at and approaching the crossing is double-tracked and measures approximately 100 feet in width, curving north to Redwood City. A separate right-of-way approximately 50 feet in width forms another leg of the wye, featuring a single-track turnout curving south towards Atherton.

commercial corridor. Where on-street parking is oriented parallel to the sidewalk, there is sufficient space to allow bicyclists to ride in relative comfort along the outer edge of the outside travel lanes. The posted speed limit of 30 miles per hour is also generally amenable to cycling. In segments where on-street parking switches to an angled configuration, however, motorists attempting to back out of parking spaces can present hazards to cyclists, forcing them to move into the center of the outer travel lane (or into the inner travel lane) and mix with motorized traffic, including larger vehicles such as buses and trucks.

Pedestrian Circulation

The existing sidewalks vary in width, but are generally narrow, ranging in width from 5 feet to 8 feet. Obstructions (such as utility poles and traffic/parking signage) and intrusion from parked vehicles (either in angled on-street spaces or extending over the property line from adjacent properties) can further reduce the effective width of the sidewalk in many locations. Many adjacent properties also include accessory off-street parking or accommodate direct vehicle access from Middlefield Road, resulting in a relatively high overall curb cut frequency and a substantial share of the street frontage for some properties devoted to curb cuts. As mentioned previously, Middlefield Road within the Project area is an important corridor for local transit services and a major neighborhood commercial corridor lined with neighborhood-serving retail and services. During peaks in pedestrian activity, such as when nearby schools[10] let out for the day, the narrow effective sidewalk width can result in sidewalk crowding and congestion at some locations.

Most crosswalks within the Project area are unmarked, and several intersections along Middlefield Road within the Project area lack marked crosswalks altogether (namely, Third Avenue, First Avenue, and Berkshire Avenue). Within the Project area, marked crosswalks across Middlefield Road are provided at Douglas Avenue, Hurlingame Avenue, the railroad crossing (located between Pacific Avenue and the driveway serving the Fair Oaks Health Center, Middlefield Junction site, and Redwood Junction Industrial Park), Dumbarton Avenue, Second Avenue, Fourth Avenue, and Fifth Avenue. At these locations, however, marked crosswalks are only provided across one leg of Middlefield Road (with the exception of Fifth Avenue), with the crosswalk across the opposite leg of Middlefield Road unmarked (or, in the case of Douglas Avenue, with access purposefully blocked and signage directing pedestrians to use the other side). The distance between marked crosswalks across Middlefield Road reaches up to 750 feet (between Dumbarton Avenue and Second Avenue).

The marked crosswalks at Douglas Avenue and Fifth Avenue are signalized and feature pedestrian signal heads, but pedestrian phases must be activated by push buttons. Crosswalk markings at these locations are standard, low-visibility designs (parallel lines), although the crosswalk across the south leg at Fifth Avenue features special paving. The marked crosswalks at the remaining locations identified above feature higher-visibility “ladder” striping, bright yellow yield signage, and special traffic control devices activated by push buttons.[11]

Crosswalks across side streets intersecting Middlefield Road are generally unmarked, with the exception of Fifth Avenue and Douglas Avenue, where crosswalk markings (parallel lines) are provided across both side-street legs, with pedestrian signal heads.

The curb-to-curb width of the street, together with the volume and speed of through traffic, can present obstacles to pedestrians attempting to cross Middlefield Road within the Project area. Corner bulb-outs or refuge areas (protected by raised curb) have only been provided at several locations with marked crosswalks—namely, Fifth Avenue (south leg only), the railroad crossing, and Hurlingame Avenue. At other locations, pedestrians must cross the full curb-to-curb width of Middlefield Road, which can reach up to approximately 75 feet. Angled on-street parking can also obstruct motorist visibility of pedestrians

[10] Nearby schools include Garfield Community School (K–8) at 3600 Middlefield Road and Everest Public High School at 455 Fifth Avenue.

[11] Traffic control devices at these locations include embedded pavement lights at Fourth Avenue, Second Avenue, and Dumbarton Avenue and rectangular rapid flashing beacons (RRFBs) at the railroad crossing and Hurlingame Avenue.

crossing Middlefield Road or intersecting side streets at some locations.

Curb ramps are provided at most intersection corners, although not all have been improved to fully comply with Americans with Disabilities Act (ADA) requirements;[12] the remainder of these curb ramps have yet to be regraded/reconstructed and/or outfitted with tactile warning devices such as truncated dome tiles for ADA compliance.[13] Some intersection corners lack curb ramps altogether, or have curb ramps that may not be oriented to serve both crossing directions (across Middlefield Road and across the intersecting side street).[14]

Transit Service and Facilities

The San Mateo County Transit District operates San Mateo County's bus public transit service (SamTrans), including two routes along Middlefield Road within the Project area:

- Route 296 provides daily local service for southern San Mateo County, linking the Redwood City Transit Center (at Caltrain's Redwood City Station) with Menlo Park (including a stop at Caltrain's Menlo Park Station) and East Palo Alto.[15] Headways (i.e., the time interval between buses) are generally 15–20 minutes on weekdays and 30 minutes on weekends (increasing to 30–60 minutes on weekday evenings and 60 minutes on weekend evenings).
- Route 397 provides daily late-night service up and down the Peninsula along Bayshore Boulevard, El Camino Real, and Middlefield Road, linking Downtown San Francisco and Palo Alto Transit Center via San Francisco International Airport, the Millbrae Transit Center (Millbrae Station), Hillsdale Station, San Carlos Station, and the Redwood City Transit Center. Headways are approximately 60 minutes.

In addition, SamTrans also operates Route 79 along Middlefield Road north of Hurlingame Avenue at the northern end of the Project limits. Service is only provided on school days and is primarily intended for school children commuting to and from schools in Redwood City and North Fair Oaks, although they are also open to other passengers. The base service features three morning trips in the westbound direction (from Friendly Acres and North Fair Oaks to Woodside Plaza) and three afternoon trips in the reverse direction.[16]

Bus stops along Middlefield Avenue within the Project area are provided at Douglas Avenue (far-side both directions), Dumbarton Avenue (near-side northbound and far-side southbound), Second Avenue (near-side northbound and far-side southbound), and Fifth Avenue (far-side both directions).

Parking

The existing on-street parking along Middlefield Road consists of both parallel and angled parking in a mixed configuration. Spaces are unmetered and time-limited (marked with green signs), with the majority of spaces generally restricted to two-hour parking between 9:00 a.m. and 4:00 p.m.[17] On-street parking

[12] ADA-compliant curb ramps are provided at MacArthur Avenue (northeast and southeast corners), Hurlingame Avenue (northeast, southeast, and southwest corners), the railroad crossing (both ends of the south-leg crosswalk), Dumbarton Avenue (northwest, southeast, and southwest corners), First Avenue (northwest corner), Second Avenue (all corners), Third Avenue (all corners), and Fourth Avenue (southeast corner only).

[13] The curb ramps at the intersection with Fifth Avenue do not feature tactile warning devices, but include audible signals activated by push buttons.

[14] Curb ramps are missing at Northside Avenue (southeast corner), Pacific Avenue (all corners), Dumbarton Avenue (northeast corner), Berkshire Avenue (all corners), First Avenue (northeast and southeast corners), and Fourth Avenue (northeast corner). A utility pole also obstructs a portion of the usable area for the curb ramp at the southwest corner of the intersection with First Avenue.

[15] Some morning and evening trips are extended to serve Palo Alto, beginning and terminating at the Palo Alto Transit Center (at Caltrain's Palo Alto Station). These trips do not serve Menlo Park Station.

[16] On Thursday school days, an additional two afternoon trips are provided in the eastbound direction.

[17] Some spaces may have slightly different restrictions (e.g., 20-minute parking along the east side north of Dumbarton Avenue, or one-hour parking between 7:00 a.m. and 7:00 p.m. along the east side north of Hurlingame Avenue).

along side streets within the Project area, where provided, is also unmetered and generally unrestricted (aside from street cleaning restrictions).[18]

Where provided, the angled parking along Middlefield Road can present hazards and disruptions to bicyclists and other roadway users when motorists attempt to back out of these spaces. Field observations identified instances where these parking maneuvers disrupted bicycle circulation along Middlefield Road and forced cyclists to move to the center of the outer travel lanes. Some cyclists were also observed to ride in the sidewalk and avoid motorized traffic altogether, thereby causing potential hazards and disruptions for pedestrian circulation in the sidewalk.

Currently, there are approximately 125 on-street parking spaces along Middlefield Road within the Project limits. Many individual properties along Middlefield Road within the Project area also provide accessory off-street parking, resulting in a comparatively high overall curb cut frequency and a substantial share of the street frontage for some properties devoted to curb cuts.

Regulatory Framework

The Project limits fall entirely within unincorporated San Mateo County, and the Project would be subject to plans, ordinances, and policies established at the County level (by San Mateo County) or higher levels of government (by regional, state, or federal agencies). Relevant plans, ordinances, and policies are described below.

County General and Community Plans

- The *San Mateo County General Plan* is a high-level planning document for San Mateo County that includes various goals and objectives related to transportation, as well as policies related to specific components of the transportation system, including automobile travel, public transit and ridesharing, bicycle and pedestrian travel, and air transportation. The plan also defines the responsibilities of the County and other agencies with respect to the County's transportation system.
- The *North Fair Oaks Community Plan*, adopted by the San Mateo County Board of Supervisors in November 2011, sets goals and supporting transportation policies for approximately 800 acres in North Fair Oaks, including the Project limits and other streets within the neighborhood. The plan includes goals related to neighborhood connectivity, pedestrian facilities, bicycle connectivity, local and regional transit connectivity, and parking demand and supply. The plan identifies a long-term vision for the neighborhood's roadway, transit, bikeway, and pedestrian networks that includes a proposed "road diet" (from four lanes to three lanes), bike lanes, sidewalk widening, and bulb-outs at crosswalks along Middlefield Road—improvements which are part of the Project and evaluated in this Initial Study.

  The plan's transportation component also conceptually identifies other potential changes that would be longer-term, "visionary" improvements such as new on-street bikeways, new shared-use bicycle/pedestrian paths, and new street connections and railroad crossings to improve local access.[19] The plan's long-term vision for transit includes a potential extension of Redwood City's proposed streetcar service along Middlefield Road, Fifth Avenue, and Broadway; new or realigned bus/shuttle service along Fifth Avenue; passenger (commuter) rail service on the Dumbarton Branch; and a new transit center where the Dumbarton Branch intersects Middlefield Road.

County Transportation Plans

- The *San Mateo County Comprehensive Bicycle and Pedestrian Plan*, adopted by the City/County

[18] Other restrictions are in effect on some isolated sections (e.g., two-hour parking along the north side of Fifth Avenue immediately west of Middlefield Road).

[19] Specific improvements include reuse of the Hetch Hetchy right-of-way for local traffic and/or a shared-use Class I bikeway/pedestrian path; new on-street bikeways (Class II and Class III) along several streets, including streets intersecting Middlefield Road such as Douglas Avenue, Dumbarton Avenue, Second Avenue, and Fifth Avenue; new shared-use Class I bikeway/pedestrian paths along the Dumbarton Branch and the Caltrain mainline; new crossings across railroad ROWs to improve connectivity for traffic, bicycles, and pedestrians; and capacity improvements at the Middlefield Road/Fifth Avenue intersection.

Association of Governments of San Mateo County (C/CAG) in September 2011, defines several goals, objectives, and policies for non-motorized transportation in San Mateo County, including establishment of a comprehensive countywide bikeway and pedestrian network; promoting biking and walking for transportation and recreation; improving bicycle and pedestrian safety; implementing "complete streets;" and building support among local jurisdictions for non-motorized transportation. The plan also defines the countywide bikeway network, including existing and proposed facilities. Streets identified for proposed bikeways in North Fair Oaks include Middlefield Road (identified as an "unclassified" on-street facility), as well as segments of Charter Street, Fifth Avenue, Bay Road, and El Camino Real. Portions of the Project area are also identified as "pedestrian focus areas" (areas with high pedestrian activity and/or areas recommended for potential pedestrian improvements), including the northern end of the corridor near the railroad crossing. The plan also includes design guidelines for pedestrian and bicycle facilities such as sidewalks, street crossings, and bikeways.

- As the administrative body for the principal public transit and transportation programs in San Mateo County, the San Mateo County Transit District publishes and/or updates several plans including the *Strategic Plan 2015–2019* (2014), the *SamTrans Service Plan* (2013), and the *Short-Range Transit Plan: Fiscal Years 2017–2026* (2017). The Strategic Plan includes high-level goals related to system ridership, farebox revenue, and other administrative and organizational priorities. The Service Plan builds off the Strategic Plan and identifies more specific objectives and recommendations to achieve the Strategic Plan's goals. The Short-Range Transit Plan includes several performance standards for fixed-route and paratransit services related to passenger satisfaction, accident rates, on-time performance, and other metrics. The Short-Range Transit Plan also identifies performance standards related to operating efficiency established by the Metropolitan Transportation Commission (MTC) as part of its Transit Sustainability Project (TSP), including cost per service hour, cost per passenger, and cost per passenger-mile. The initial set of service changes and subsequent refinements from the Service Plan have already been implemented, and there are no active plans to modify existing transit service within the Project area.
- The *San Mateo County Transportation Plan for Low-income Populations* (2012), published by C/CAG, identifies strategies to improve the affordability and accessibility of transportation options for San Mateo County's low-income residents, including transit stop amenities, public outreach, free/discounted fare programs, transit connections and service, pedestrian and bicycle safety and amenities, free/discounted bicycle programs, and other strategies.

Congestion Management Program

- C/CAG, as the Congestion Management Agency for San Mateo County, is required to prepare and adopt a Congestion Management Program (CMP) on a biennial basis to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions.[20] The CMP monitors the performance of the designated CMP Roadway System, which includes all State Route and Interstate highway segments and 16 selected intersections within San Mateo County.[21] There are no components of the CMP Roadway System (either roadways or intersections) located within the Project area; El Camino Real/State Route (SR) 82 and United States Highway 101 (U.S. 101) are the nearest CMP roadways, while Woodside Road (SR 84)/Middlefield Road is the nearest CMP intersection (approximately 0.5 miles north of the Project area).

The CMP defines several performance measures, including LOS standards for the CMP Roadway System; travel times for single-occupant automobiles, carpools, and transit; pedestrian and bicycle improvements; and peak-period transit ridership. The CMP also includes C/CAG's programs and policies regarding transportation systems management (TSM) and transportation demand

[20] The CMP must be consistent with the regional planning process administered by the MTC and the regional goals, policies, and projects for the Regional Transportation Improvement Program (RTIP). The 2017 CMP, for example, was developed to be consistent with MTC's Plan Bay Area.

[21] The CMP Roadway System also includes Geneva Avenue, Mission Street, and Bayshore Boulevard in northern San Mateo County to be consistent with the designated CMP roadway network for San Francisco County. No other facilities are designated as part of the CMP Roadway System aside from these three roadways, the segments of State Route and Interstate highways within San Mateo County, and the 16 CMP intersections.

management, which address efforts to improve the efficiency of the existing system and encourage use of alternative modes of transportation.

The CMP also includes a Traffic Impact Analysis (TIA) policy, which provides uniform procedures to analyze traffic impacts on the CMP network. The TIA Policy for roadway modification projects requires the project sponsor, in consultation with C/CAG staff, to determine if a roadway modification project on or near a roadway in the CMP Roadway System would have potential near-term and long-term traffic impacts on the CMP Roadway System. If an initial assessment indicates that a significant traffic impact on the CMP Roadway System may result, a traffic impact analysis consistent with the TIA policy must be conducted. Impacts to the CMP Roadway System must be mitigated, such as through modifications to the Project, roadway improvements, operational changes, or provision of alternate routes. C/CAG staff will review roadway modification projects to determine consistency with the TIA policy and conformance with the CMP.

County Traffic Impact Study Requirements

- The County's Traffic Impact Study Requirements (September 1, 2013), published by the Department of Public Works, describes requirements for the analysis of transportation and circulation impacts, including provisions governing minimum trip thresholds for analysis, general analysis assumptions and methodology, impact significance criteria, and analysis documentation. These requirements are generally intended for the evaluation of land use development projects, but can be applied in a similar fashion to transportation projects (such as the Project).

Other Plans, Policies, and Programs

- The California Public Utilities Commission (CPUC) issues several General Orders governing rail crossings, including (but not limited to) General Order 72-B (construction and maintenance at grade crossings), General Order 75-D (grade crossing warning devices), and General Order 88-B (alterations to grade crossings).

The California Department of Transportation (Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as that portion of the Interstate Highway System within California. Caltrans also performs various other duties related to the statewide transportation system, including for freight and passenger rail and non-motorized modes of transportation. Although there are no designated State Route or Interstate highways within the Project area, Caltrans publishes the *California Manual on Uniform Traffic Control Devices* (MUTCD), which describes uniform standards and specifications for all official traffic control devices in California, including traffic controls for grade crossings.[22]

Sources:

AECOM. 2018. *Middlefield Road Improvement Project Traffic Operations Analysis Report*. Included as Appendix D.

California Public Utilities Commission (CPUC). 1991. *General Order No. 72-B; Rules Governing the Construction and Maintenance of Crossings at Grade of Railroads with Public Streets, Roads and Highways in the State of California*. Accessed March 5, 2018 at http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/59565.htm.

_____. 2006. *General Order No. 75-D; Regulations Governing Standards for Warning Devices for At-Grade Highway-Rail Crossings in the State of California*. Accessed March 5, 2018 at http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/60157.htm.

_____. 2000. *General Order No. 88-B; Rules for Altering Public Highway-Rail Crossings*. Accessed March 5, 2018 at http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/33542.htm.

Caltrans. 2017. *California Manual on Uniform Traffic Control Devices; FHWA's MUTCD 2009 Edition,*

[22] The *California MUTCD* is an amended version of the national MUTCD published by the Federal Highway Administration (FHWA).

including Revisions 1 & 2 as amended for use in California. Accessed March 5, 2018 at http://www.dot.ca.gov/trafficops/camutcd/docs/2014r2/CAMUTCD2014_Cover_rev2.pdf.

County of San Mateo. 1986. *General Plan*. Accessed March 5, 2018 at https://planning.smcgov.org/sites/planning.smcgov.org/files/SMC-GP%201986.pdf.

North Fair Oaks Community Plan (County of San Mateo 2011a). Accessed March 1, 2018 at https://planning.smcgov.org/north-fair-oaks-community-plan.

North Fair Oaks Community Plan Update Draft Environmental Impact Report (County of San Mateo 2011b). Accessed March 1, 2018 at https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/NFO%20Draft%20EIR.pdf.

North Fair Oaks Community Plan Update Final Environmental Impact Report (County of San Mateo 2011c). Accessed March 1, 2018 at https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/NFO_FinalEIR.pdf.

Rail Crossing Rules and Regulations (CPUC 2018). Accessed March 5, 2018 at http://www.cpuc.ca.gov/General.aspx?id=3862.

San Mateo County Bicycle Map (C/CAG). Accessed February 28, 2018 at http://ccag.ca.gov/wp-content/uploads/2014/05/sm1.pdf; http://ccag.ca.gov/wp-content/uploads/2014/05/sm2.pdf.

San Mateo County Comprehensive Bicycle and Pedestrian Plan (C/CAG 2011). Accessed March 1, 2018 at http://ccag.ca.gov/wp-content/uploads/2014/07/CBPP_Main-Report__Sept2011_FINAL.pdf.

San Mateo County Congestion Management Program 2017 (C/CAG 2018). Accessed March 1, 2018 at http://ccag.ca.gov/wp-content/uploads/2018/03/2017-CMP-Final-v2.0.pdf; http://ccag.ca.gov/wp-content/uploads/2018/02/2017-Final-Draft-CMP-Appendix-1.pdf.

San Mateo County Transit District. 2017a. *Dumbarton Transportation Corridor Study; Final Report*. Accessed February 28, 2018 at http://www.samtrans.com/Assets/Dumbarton+Rail+Corridor/PDFs/171120+DTCS+-+Full+Report.pdf.

San Mateo County Transit District Short-Range Transit Plan; Fiscal Years 2017 – 2026 (San Mateo County Transit District 2017b). Accessed March 1, 2018 at http://www.samtrans.com/Assets/_Planning/2017-2026+SamTrans+Short+Range+Transit+Plan.pdf.

San Mateo County Transit District Strategic Plan 2015-2019 (San Mateo County Transit District 2014). Accessed March 1, 2018 at http://www.samtrans.com/Assets/_Public+Affairs/Government+Affairs/pdf/Final+SamTrans+Strategic+Plan+2015-2019.pdf.

San Mateo County Transportation Plan for Low-income Populations (C/CAG 2012). Accessed March 1, 2018 at http://www.dot.ca.gov/hq/tpp/offices/ocp/completed_projects/ej_communityplans/D4_Countywide_Transportation_Plan_for_Low-Income_Populations/San_Mateo_County_Transportation_Plan_for_Low-income_Populations.pdf.

SamTrans Bus Route Map (San Mateo County Transit District 2018). Accessed March 1, 2018 at http://www.samtrans.com/Assets/maps/SamTrans+Maps/SamTrans_Peninsula_Vertical_1-2018-web.pdf.

SamTrans Service Plan; Final Adopted Recommendations (San Mateo County Transit District 2013). Accessed March 1, 2018 at http://www.samtrans.com/Assets/_SSP/SSP+Doc_+May+2013v6.pdf.

Traffic Impact Study Requirements (County of San Mateo 2013). Accessed March 5, 2018 at https://publicworks.smcgov.org/sites/publicworks.smcgov.org/files/documents/files/Traffic%20Imp

act%20Study%20Guidelines-Final%2008-15-2013.pdf.

Transportation Policies (County of San Mateo). Accessed March 1, 2018 at https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/GP%20Ch%2012-Transportation%20Policies_0.pdf.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☒	☐	☐

Discussion:

With the exception of the Short-Range Transit Plan published by SamTrans, the majority of the applicable plans, ordinances, or policies described above discuss principles, goals, and objectives—but do not specifically establish measures of effectiveness—for the performance of the circulation system. In general, however, the identified principles, goals, and objectives involve improvements to transit and non-motorized modes of transportation, including transit service and connections and/or bicycle/pedestrian safety and connectivity. The specific performance standards identified by SamTrans relate to system ridership, farebox revenue, passenger satisfaction, accident rates, on-time performance, operating efficiency, and other metrics. As described above, the CMP also includes performance standards related to LOS for the CMP Roadway System; travel times for motorized travel; pedestrian and bicycle improvements; and peak-period transit ridership.

Construction:

The Project would generate temporary and short-term construction traffic associated with the transport of construction equipment, materials, and workers to and from the site. On an average day, there would be approximately 30 construction workers. Construction activities at the site would also generate heavy vehicle trips, including trucks for off-site soil export (maximum of 50 daily trips), heavy equipment transport, or materials deliveries. In general, however, truck trips would be spread out over the course of the work day, such that the majority of construction-related traffic during the weekday AM and PM peak periods (typically, 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively) would be associated with construction worker trips.

In addition, construction of the Project would involve temporary lane closures, detours, and other traffic control measures that could cause temporary, localized congestion in and around the Project area during the construction period. A draft construction staging concepts technical memorandum (AECOM 2017) has been prepared for the Project, which will be finalized in conjunction with final Project design, prior to construction. In order to minimize disruption to businesses and to traffic, transit, bicycle, and pedestrian circulation, the staging concept proposes to construct each side (east and west) of Middlefield Road separately, such that one side of the street can be used to maintain one lane of traffic in each direction during construction on the other side of the street. Construction along each side of Middlefield Road would progress approximately two blocks at a time, thereby minimizing the period that adjacent businesses would have active construction occurring along their frontage.

Construction-related impacts to transportation and circulation would include a temporary and intermittent reduction in roadway capacity in the Project area vicinity due to construction truck traffic (as a result of slower speeds and larger turning radii compared to passenger vehicles) and temporary lane closures or other traffic controls during the construction period. These impacts could temporarily affect the performance standards described above, for example, by increasing travel times for transit vehicles and passenger vehicles passing through the Project area or encouraging some vehicle traffic to detour to other facilities (including roadways and intersections that are part of the designated CMP Roadway

System). Construction activities may also result in temporary effects on transit access and accessibility and bicycle/pedestrian circulation and safety (such as by requiring temporary relocation of bus stops or bicycle/pedestrian paths of travel), which could, in turn, conflict with several adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities described above. Therefore, construction-related impacts could be potentially significant. Mitigation Measure TRA-1 is proposed to reduce the impacts of construction-related traffic on traffic, transit, bicycle, and pedestrian circulation.

> ***Mitigation Measure TRA-1: Traffic Control Plan.*** *The Construction Contractor shall be responsible for preparing and implementing a Traffic Control Plan (TCP) approved by the County, prior to the start of construction. The TCP shall include traffic control measures to ensure the safety of all roadway users (including motorists, transit riders, bicyclists, and pedestrians) and minimize disruptions to traffic, transit, bicycle, and pedestrian circulation during the construction period.*
>
> *Towards the above goals, the TCP shall include, but not be limited to, the following provisions:*
>
> - *Identification of required temporary traffic control devices (as determined necessary by the County), including signage, delineators, flashing arrows, and/or temporary pavement markings (e.g., lane striping).*
> - *Advance notification (signage) to notify all roadway users of major construction activities (e.g., lane closures, bus stop relocations) and other associated information (e.g., recommended detour routes).*
> - *Coordination with transit service providers (i.e., SamTrans) to identify potential effects to transit access or operations and potential solutions to address these issues (e.g., relocation of bus stops).*
> - *Coordination with County and local emergency service providers (e.g., police, fire, and medical) to minimize effects on response times through the Project area (e.g., identification of detour routes) and maintenance of emergency vehicle access for properties adjacent to or in the vicinity of the Project area at all times.*
> - *Identification of locations for contractor parking (e.g., existing on- and/or off-street facilities, staging areas within the Middlefield Road ROW, etc.), if necessary, to minimize the loss of on-street parking capacity within the Project area during construction.*
> - *Identification of construction equipment/material delivery procedures and staging areas.*
> - *Restrictions on construction truck traffic to and from the site during the weekday AM and PM peak periods, when feasible.*
> - *Deployment of flaggers and appropriate signage to ensure the safety of all roadway users during lane closures.*
> - *Notification to adjacent property owners and public safety personnel regarding schedules for major deliveries, recommended detour routes, and other construction effects (e.g., lane/sidewalk closures).*
> - *Identification of designated routes for construction trucks traveling to/from the site and monitoring of pavement quality along these routes so that damage and debris attributable to construction trucks can be identified and corrected by the Construction Contractor.*
> - *Procedures for granting access to delivery trucks and service vehicles to businesses within the active construction segment during construction hours, including signage, barricades, use of flaggers; and for maintaining access after hours and/or during weekends when construction personnel are not present.*

Procedures for maintaining customer access to local businesses throughout construction, including temporary pedestrian pathways and appropriate signage. With implementation of Mitigation Measure

TRA-1, construction-related traffic impacts would be reduced to less-than-significant levels.

Operation:

As discussed in Section 2, "Project Description," the Project would reconfigure Middlefield Road from a four-lane roadway to a three-lane roadway (one lane in each direction, with a two-way center left-turn lane) and install new buffered bike lanes; widen sidewalks and construct new bulb-outs; convert existing angled parking to parallel parking; and implement other minor improvements. The Project would also implement several changes to the Dumbarton Branch railroad crossing (as well as the existing access road serving the Fair Oaks Health Center, the Middlefield Junction site, and the Redwood Junction Industrial Park) to address CPUC concerns, including relocation of signage; replacement/reconstruction of curbs, medians, and track signal equipment; modifications to lane striping and other pavement markings; prohibition of left-turn movements out of Northside Avenue; prohibition of all movements onto Northside Avenue from Middlefield Road; and signalization of the access road intersection with Middlefield Road, with railroad preemption.

Transit, Bicycle, and Pedestrian Circulation

The Project is specifically designed to improve the safety and comfort of cyclists, pedestrians, and transit users along Middlefield Road in accordance with the principles, goals, and objectives described above. On-street bikeways along Middlefield Road are explicitly called out in several of the aforementioned plans, including the *San Mateo County Comprehensive Bicycle and Pedestrian Plan* and the *North Fair Oaks Community Plan*. By repurposing roadway space to improve the safety attractiveness of bicycle, pedestrian, and transit facilities, the proposed modifications are also anticipated to divert some automobile traffic away from Middlefield Road within the Project limits and encourage a mode shift to bicycling, walking, and transit use. Specific elements of the Project are discussed in more detail below.

- Removal of one travel lane in each direction would calm traffic and discourage speeding, which would benefit roadway users who are more vulnerable in collisions, such as bicyclists, pedestrians, and transit users.
- New buffered bike lanes in each direction, with buffer zones from adjacent on-street parking, would provide dedicated roadway space for cyclists and increase motorists' visibility and awareness of cyclists.
- New bulb-outs at each intersection (together with marked, high visibility ladder crosswalks at selected locations) would reduce the crossing distance across Middlefield Road to approximately 45 feet (compared to the existing 75 feet), improve sightlines between pedestrians and motorists, and enhance motorists' overall visibility and awareness of pedestrians.
- Sidewalk widening and removal of overhead wires and poles would increase circulation space for pedestrians, enhance the attractiveness of the pedestrian realm, and improve pedestrian accessibility.
- Conversion of existing angled parking to parallel parking, with a buffer between parking spaces and the adjacent bicycle lanes, would reduce the potential for conflicts associated with motorists exiting parking spaces.
- Relocation of bus stops at intersections from near-side (upstream) to far-side (downstream) locations would improve sightlines at intersections for all roadway users.
- Improvements at the railroad crossing and the access road serving the Fair Oaks Health Center, the Middlefield Junction site, and the Redwood Junction Industrial Park would reduce the potential for right-of-way conflicts and improve safety, comfort, and convenience for bicyclists, pedestrians, and transit users. Additional discussion of safety improvements at the railroad crossing and adjacent access road is provided under Item 16.d.

The Project would also not preclude potential longer-term improvements for public transit, bicycle, or pedestrian facilities identified in the adopted policies, plans, or programs described above, such as passenger rail service on the Dumbarton Branch, extension of Redwood City's proposed streetcar, or the

other changes identified in the *North Fair Oaks Community Plan*.

Overall, Project operation would be consistent with applicable plans, policies, and ordinances establishing measures of effectiveness relating to transit and non-motorized modes of transportation, and would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities (or otherwise decrease the performance or safety of such facilities). Therefore, this impact would be less-than-significant.

Traffic Circulation

Based on the County of San Mateo's significance standards, a project would have a significant impact if it would do either of the following:

- Cause the intersection to exceed the overall LOS standard (LOS D);[23] or
- For those intersections that are currently not in compliance with the overall LOS standard, increase the average control delay at the intersection by four (4) seconds or more.

The traffic study, included as Appendix D, evaluated LOS and 95th percentile queue lengths for the 12 major intersections within the Project limits and an additional 35 intersections outside of the Project limits. The study considers existing (2017) conditions and future conditions (for the Project's opening year in 2020 and design year in 2050). A summary of the LOS analysis is presented below (additional details are provided in the traffic study).

Under existing conditions, 8 of the 12 intersections within the Project limits and 9 additional intersections in the wider study area currently operate at unacceptable LOS (LOS E or LOS F) during at least one of the peak hours.[24]

Under the No Build scenario (i.e., if the Project did not proceed), conditions would worsen by 2020, with 10 intersections within the Project limits and 11 additional intersections within the wider study area operating at unacceptable LOS during at least one peak hour. By 2050, conditions would worsen further, with all 12 intersections within the Project limits and 26 additional intersections within the wider study area operating at unacceptable LOS during at least one peak hour.

Opening Year (2020) Conditions

Impacts of the Project in its opening year can be determined by comparing 2020 Build conditions (i.e., with the Project) to 2020 No Build conditions (i.e., without the Project).

Based on this analysis, implementation of the Project would have the following impacts in 2020:

- Two intersections within the Project limits and 24 additional intersections within the wider study area would operate at an acceptable LOS during all peak hours, both without and with the Project.
- Five intersections within the Project limits and one additional intersection within the wider study area would operate at an unacceptable LOS without the Project during at least one peak hour, but would improve to an acceptable LOS during the same peak hour(s) with the Project.
- Four intersections within the Project limits and ten additional intersections within the wider study area would operate at an unacceptable LOS without the Project during at least one peak hour and would continue to operate at an unacceptable LOS during the same peak hour(s) with the Project, but

[23] As defined in *Traffic Impact Study Requirements* published by the County's Department of Public Works, County policy generally considers a project to have a significant impact if the project "would cause the intersection to operate at LOS that violates the standard overall LOS C, with no individual movement operating at worse than LOS D." However, on occasion, LOS D may be allowed for peak periods in very dense urban conditions at the County's discretion. Since Middlefield Road and the rest of the study area are located in a relatively dense urban setting, this analysis applies LOS D as the acceptable standard for all intersections (both signalized and unsignalized).

[24] The traffic study (Appendix D) considers three peak periods: the morning (AM) peak period (7:00 to 9:00 AM), the school afternoon (School PM) peak period (1:00 to 3:00 PM), and the afternoon/evening (PM) peak period (4:00 to 6:00 PM). Conditions at each intersection are evaluated for the peak hour (i.e., four consecutive 15-minute periods) within each peak period.

would not see a decline in LOS or an increase in average delay of more than 4 seconds with the Project for those peak hour(s).

- One intersection within the Project limits (Middlefield Road/Fifth Avenue) and no intersections within the study area would deteriorate from an acceptable LOS without the Project to an unacceptable LOS with the Project during at least one peak hour.

Therefore, the Project would generally have a negligible effect on, or would improve, LOS at the majority of intersections within the Project limits and the wider study area, but would have a potentially significant impact at the following intersection:

- Middlefield Road/Fifth Avenue (AM and PM peak hours)

The traffic study identifies potential design changes that could be implemented at the intersection to improve LOS. These improvements are incorporated into Mitigation Measure TRA-2 below:

> ***Mitigation Measure TRA-2: Middlefield Road/Fifth Avenue Intersection Improvements.*** *To mitigate the Project's LOS impacts at the Middlefield Road/Fifth Avenue intersection, the County Department of Public Works shall fund and implement the following improvements such that the increase in average peak-hour delay over 2020 No Build conditions would be less than 4 seconds:*
>
> *1) Re-stripe the eastbound and westbound approaches of Fifth Avenue to include a left-turn pocket and a shared through/right-turn lane; and*
>
> *2) Modify signal timing.*

With implementation of Mitigation Measure TRA-2, LOS at the Middlefield Road/Fifth Avenue intersection under 2020 Build conditions would improve to acceptable LOS under the AM and PM peak hours, and the Project impacts would be reduced to a less-than-significant level[25].

Design Year (2050) Conditions

Impacts of the Project in its design year can be determined by comparing 2050 Build conditions to 2050 No Build conditions. Based on this analysis, implementation of the Project would have the following impacts in 2050:

- No intersections within the Project limits and nine additional intersections within the wider study area would operate at acceptable LOS during all peak hours, both without and with the Project.
- One intersection within the Project limits and one additional intersection within the wider study area would operate at an unacceptable LOS without the Project during at least one peak hour, but would improve to an acceptable LOS during the same peak hour(s) with the Project.
- Eight intersections within the Project limits and 22 additional intersections within the wider study area would operate at unacceptable LOS without the Project during at least one peak hour and would continue to operate at an unacceptable LOS during the same peak hour(s) with the Project, but would not see a decline in LOS or an increase in average delay of more than 4 seconds with the Project for those peak hour(s).
- Three intersections within the Project limits (Middlefield Road/Berkshire Avenue, Middlefield

[25] The North Fair Oaks Community Plan EIR (County 2011) recommended improvements at the Middlefield Road/Fifth Avenue intersection to mitigate traffic impacts at that intersection resulting from implementation of the Community Plan under existing (2011) and cumulative (2035) conditions. In comparison, the traffic analysis for this Project (Middlefield Road improvements) considers an existing conditions scenario reflecting 2015 data, as well as future scenarios for opening year (2020) and design year (2050) conditions based on more recent versions of the VTA-C/CAG travel demand forecasting model for 2013, 2020, and 2040. Therefore, the Project's traffic analysis assumed that the previously recommended improvements (from the Community Plan EIR) would be made under both the no-build and build scenarios, and found that significant impacts would occur at the Middlefield/Fifth intersection as a result of the Project. Mitigation Measure TRA-2 therefore identifies improvements at the Middlefield/Fifth intersection that are different to the improvements in the Community Plan EIR. The modeling showed that traffic impacts at the Middlefield/Fifth intersection would be reduced to a less-than-significant level with implementation of Mitigation Measure TRA-2 improvements.

Road/First Avenue, and Middlefield Road/Fifth Avenue) and three additional intersections within the wider study area (Middlefield Road/Sixth Avenue, Middlefield Road/Seventh Avenue, and El Camino Real/Fifth Avenue) would operate at an unacceptable LOS without the Project during at least one peak hour and would see a decline in LOS or an increase in average delay of more than 4 seconds with the Project during the same peak hour(s).

Therefore, the Project would generally have a negligible effect on, or would improve, LOS at the majority of intersections within the Project limits and the wider study area, but would have a potentially significant impact at the following six intersections:

- Middlefield Road/Berkshire Avenue (AM and PM peak hours)
- Middlefield Road/First Avenue (AM peak hour)
- Middlefield Road/Fifth Avenue (School PM peak hour)
- Middlefield Road/Sixth Avenue (PM peak hour)
- Middlefield Road/Seventh Avenue (AM and PM peak hours)
- El Camino Real/Fifth Avenue (AM and PM peak hours)

Implementation of Mitigation Measure TRA-2 for the Middlefield Road/Fifth Avenue intersection, as described above for 2020 Build conditions, would reduce the Project's impacts at this intersection in 2050 to a less-than-significant level. No further mitigation is required to address the Project's impacts at this intersection under 2050 Build conditions.

Of the remaining five intersections, the four along Middlefield Road (Middlefield Road/Berkshire Avenue, Middlefield Road/First Avenue, Middlefield Road/Sixth Avenue, and Middlefield Road/Seventh Avenue) are currently under side-street stop control, and would remain so under the Project. The Project's impacts at these four intersections would primarily be due to increased delay for side-street traffic as a result of the reduction in through lanes and a corresponding reduction in adequate gaps in traffic flow along Middlefield Road. The Project's impacts at the El Camino Real/Fifth Avenue intersection would be due to diverted traffic as a result of the reduction in through lanes along Middlefield Road.

The traffic study identifies potential design changes that could be implemented at these five intersections to improve LOS and reduce the Project's impacts at these locations to less-than-significant levels. These improvements are incorporated into Mitigation Measure TRA-3 below. Because the identified impacts at these five intersections would not occur immediately, Mitigation Measure TRA-3 includes provisions requiring the County to monitor conditions at these locations and implement the identified improvements only if and when the applicable significance thresholds are triggered.

> ***Mitigation Measure TRA-3: Monitoring and Improvements at Middlefield Road/Berkshire Avenue, Middlefield Road/First Avenue, Middlefield Road/Sixth Avenue, Middlefield Road/Seventh Avenue, and El Camino Real/Fifth Avenue.*** *The County Department of Public Works shall monitor traffic delay at the five intersections listed above to determine when a significant impact would be triggered. Monitoring shall be performed every five years, starting in 2021 or one year following completion of Project construction (whichever is later), and a monitoring report shall be prepared for the County Department of Public Works. The monitoring reports shall include, but not be limited to, a narrative of the site conditions, the method of determining average traffic delay, the results of the monitoring program, and a comparison to 2050 No Build conditions as described in the traffic study. If monitoring at any of these intersections shows that the traffic delays would exceed the 2050 No Build Conditions by more than 4 seconds, the County Department of Public Works would fund and implement actions or improvements to decrease the average delay at those intersections to no more than 4 seconds above the delay under 2050 No Build conditions.*
>
> *The following suggested improvement actions have been identified for each intersection, and have been assessed as being sufficient to mitigate Project impacts to less-than-significant levels:*

- *Middlefield Road/Berkshire Avenue: Installation of a traffic signal.*
- *Middlefield Road/First Avenue: Installation of a traffic signal.*
- *Middlefield Road/Sixth Avenue: Installation of a traffic signal.*
- *Middlefield Road/Seventh Avenue: Modification of the eastbound approach (driveway) to right-turn-only egress (i.e., prohibition of left-turn and through movements out of the driveway).*
- *El Camino Real/Fifth Avenue: Addition of a second westbound left-turn pocket.*

With the installation of each traffic signal (or combination of traffic signals), the County Department of Public Works shall re-evaluate traffic operations at nearby upstream and downstream intersections within the corridor, consistent with standard traffic engineering practice. This exercise would determine appropriate signal timing offsets or other specific design considerations, if warranted, to address any secondary impacts to traffic circulation.

However, it is possible that at such future time when improvements are required to be implemented, the County Department of Public Works may seek to implement alternate improvement actions to mitigate the impacts. If so, the County DPW shall analyze the alternate improvements prior to implementation to document that they would achieve the same performance standard as the suggested improvements by reducing the average delay to no more than 4 seconds above the delay under 2050 No Build conditions.

With implementation of Mitigation Measure TRA-3, the Project's impacts at these five intersections under 2050 Build conditions would be reduced to less-than-significant levels.

Conclusion:

With adherence to Mitigation Measure TRA-1, construction-related impacts would be less than significant. With adherence to Mitigation Measures TRA-2 and TRA-3, operational impacts would be less than significant.

Sources:

AECOM. 2017. Middlefield Road Improvement Project - Construction Staging Concepts Technical Memorandum (draft). Prepared for County of San Mateo Department of Public Works.

_____. 2018. Middlefield Road Improvement Project - Traffic Analysis Technical Memorandum. Prepared for County of San Mateo Department of Public Works. Included as Appendix D.

County of San Mateo. 2011. *North Fair Oaks Community Plan Update Final Environmental Impact Report* Accessed March 1, 2018 at https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/NFO_FinalEIR.pdf.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.b. 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?	☐	☒	☐	☐

Discussion:

See Item 16.a above for a discussion of potential Project impacts related to traffic circulation (i.e., LOS standards) and to transit, bicycle, and pedestrian circulation.

Conclusion:

With adherence to Mitigation Measures TRA-2 and TRA-3, the Project impacts would be less than

significant.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

Discussion:

Implementation of the Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks. The nearest airport is San Carlos Airport, located approximately 2.9 miles northwest of the Project area, and the Project does not involve air traffic or include features that would conflict with Federal Aviation Administration requirements related to objects affecting navigable airspace. Therefore, there would be no impact.

Conclusion:

The Project would have no impacts.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐

Discussion:

Construction:

This item (Item 16.d) involves hazards from design features or incompatible uses associated with the Project. These specific elements relate to operational components of the Project. Therefore, this threshold is not applicable to Project construction. General impacts to bicycle/pedestrian safety as a result of Project-related construction activities are addressed under Item 16.a, above.

Operation:

The Project would not include any hazardous design features, and is specifically designed to improve the safety and comfort of cyclists, pedestrians, and transit users along Middlefield Road, as discussed under Item 16.a, above. The Project is a road improvement Project and does not involve incompatible land uses or activities. All improvements would be designed in compliance with County standards and would generally be expected to increase overall roadway safety (including for motorists) by removing angled parking, relocating bus stops at intersections to far-side (downstream) locations, and discouraging speeding.

As discussed under Item 16.a, above, the Project would also improve safety in the vicinity of the Dumbarton Branch railroad crossing between Pacific Avenue and Northside Avenue. Minor improvements to the access road and the connecting driveway serving the adjacent property now occupied by the Fair Oaks Health Center were completed in 2013 in conjunction with construction of the Health Center, without authorization by the CPUC. The CPUC has also expressed safety concerns related to motorists bypassing the automatic warning devices at the crossing when turning left from westbound Northside Avenue, as well as identified the need to signalize the access road intersection with Middlefield Road and provide railroad preemption. Due to the railroad crossing and the close spacing of nearby intersections along Middlefield Road (at Hurlingame Avenue, Northside Avenue, the access road, and Pacific Avenue), traffic flows (particularly for conflicting movements) proceed in a somewhat un-orderly fashion under existing conditions. In addition, an existing driveway serving an auto-repair business on the northern corner of Northside Avenue and Middlefield Road contributes additional vehicle movements and potential conflicts at this busy intersection.

To address these issues, the Project would include the following improvements in the vicinity of the railroad crossing and the access road serving the Fair Oaks Health Center, the Middlefield Junction site,

and the Redwood Junction Industrial Park:

- Relocation of the access road and associated signage;
- Restriping and modification of raised medians within the access road;
- Replacement and relocation of track signal equipment and curbs within the railroad crossing;
- Restriction of traffic on Northside Avenue to one-way (westbound only) between Stanford Avenue and Middlefield Road, with right-turn only onto Middlefield Road; and
- Installation of signals (with railroad pre-emption) to control intersections along Middlefield Road at Hurlingame Avenue, Northside Avenue, the access road, and Pacific Avenue.

The proposed improvements would address existing deficiencies and reduce the number of conflict points in the vicinity of the railroad crossing, thereby reducing hazards for all roadway users, including bicyclists, pedestrians, transit users, and motorists. Therefore, Project operation would have a less-than-significant impact related to transportation hazards due to a design feature or incompatible uses.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project: 16.e. Result in inadequate emergency access?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☒	☐	☐

The nearest hospital providing emergency medical services is Kaiser Permanente's Redwood City Medical Center at 1100 Veterans Boulevard near Downtown Redwood City, approximately one mile northwest of the Project area. Other nearby hospitals include Dignity Health's Sequoia Hospital at 170 Alameda de las Pulgas in the Oak Knoll/Redwood Park neighborhood of Redwood City (approximately 2.2 miles west of the Project area) and Stanford Hospital in Palo Alto (approximately 3.1 miles southeast of the Project area). The Fair Oaks Health Center at 2710 Middlefield Road does not provide emergency medical services (San Mateo County Health System 2018) and is considered unlikely to present a major source of emergency vehicle traffic, although a small number of emergency vehicles may occasionally travel to and from the center, primarily for the transfer of patients to other medical facilities.

Although North Fair Oaks is within unincorporated San Mateo County, fire services are provided by adjacent fire departments and districts including the Redwood City Fire Department and the Menlo Park Fire Protection District. The closest fire stations to the Project area are Menlo Park Fire Protection District's Station 5 (4101 Fair Oaks Avenue, approximately 0.7 mile east) and Redwood City Fire Department's Station 11 (1091 Second Avenue, approximately 0.8 mile northeast).

Police services in North Fair Oaks are provided by the Headquarters Patrol Bureau of the San Mateo County Sheriff's Office, at 400 County Center in Downtown Redwood City, approximately 1.2 miles northwest of the Project area. The bureau's North Fair Oaks Substation is located within the Project limits at 3121 Middlefield Road (at Fourth Avenue).

<u>Construction:</u>

As discussed under Item 16.a above, construction of the Project would involve temporary lane closures, detours, and other traffic control measures that could cause temporary, localized congestion in and around the Project area during the construction period, which could also affect emergency vehicles. Such impacts could potentially be significant. The Menlo Park Fire Protection District has previously indicated that Middlefield Road is an important route for emergency vehicles, and has expressed concern that if Project construction required emergency vehicles to divert to nearby local streets, existing traffic calming measures on those streets would likely result in delayed response times.

Implementation of Mitigation Measure TRA-1, described above under Item 16.a above, would reduce impacts of Project construction on emergency access. In particular, Mitigation Measure TRA-1 includes

provisions for coordination with County and local emergency service providers to reduce effects on response times through the Project area and maintain emergency access for properties adjacent to or near the Project area. Restrictions on construction truck traffic to and from the site during the weekday AM and PM peak periods (when feasible) would also reduce the effects on emergency access during periods when the roadway network is most congested.

With implementation of Mitigation Measure TRA-1, construction-related impacts to emergency access would be reduced to less-than-significant levels.

Operation:

Refer to discussion under Item 14.a in Section 14, "Public Services."

Conclusion:

With adherence to Mitigation Measure TRA-1, the construction-related impacts would be less than significant. Operational impacts would be less than significant.

Sources:

Fire Safe San Mateo. 2018. *Fire Codes*. Accessed March 6, 2018 at https://www.firesafesanmateo.org/resources/fire-codes.

San Mateo County Health System. 2018. *Fair Oaks Health Center*. Accessed March 6, 2018 at https://www.smchealth.org/location/fair-oaks-health-center.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.f. Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Discussion:

Refer to discussion of Item 16.a above.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.g. Cause noticeable increase in pedestrian traffic or a change in pedestrian patterns?	☐	☐	☒	☐

Discussion:

Construction:

Construction-related activities for the Project would not be expected to increase pedestrian activity, but could result in changes to pedestrian paths of travel due to sidewalk/crossing closures or other temporary traffic controls and effects. However, these changes would generally be temporary in nature and would not be expected to substantially affect overall pedestrian circulation patterns within or near the Project area. In particular, access to adjacent and nearby properties and businesses would be maintained over the course of construction. Therefore, construction-related impacts on pedestrian activity and circulation patterns would be less than significant. Implementation of Mitigation Measure TRA-1, as identified under Item 16.a above, would further reduce these less-than-significant impacts by requiring deployment of flaggers and signage and coordination with transit service providers to maintain adequate access to/from transit services.

Operation:

The Project would include new bulb-outs and marked crosswalks, sidewalk widening, removal of

overhead wires and poles, conversion of existing angled parking to parallel parking, relocation of bus stops to far-side locations, and safety improvements at the Dumbarton Branch railroad crossing. These improvements could encourage increased foot traffic within and in the vicinity of the Project area, including increased frequency of pedestrian activity among those who already travel through the area on foot, as well as entirely new pedestrian activity associated with new users (e.g., new customers patronizing neighborhood businesses for the first time) or users shifting from other modes (e.g., existing customers who currently drive to neighborhood businesses now choosing to bike, walk, or take transit). New bulb-outs and marked crosswalk locations, as well as the elimination of one travel lane in each direction of Middlefield Road, may also result in changes to pedestrian circulation patterns by facilitating crossings at locations where pedestrians are currently discouraged from crossing.

However, as discussed under Item 16.a above, these changes would be specifically designed to improve pedestrian safety and accessibility and enhance the overall quality of the pedestrian realm within the Project area, in accordance with the applicable plans, ordinances, and policies described above. While the Project could increase pedestrian activity and affect pedestrian circulation patterns, these changes would be specifically balanced by and accommodated by the proposed improvements, and it is unlikely that such changes would result in overall conditions for pedestrians that would be worse than existing conditions (such as by substantially increasing pedestrian activity such that it would result in unsafe conditions or exceed the capacity of sidewalks and other pedestrian facilities). Therefore, operation-related impacts on pedestrian activity and circulation patterns would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project: 16.h. Result in inadequate parking capacity?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☒	☐

Discussion:

Construction:

Construction-related activities for the Project could result in the temporary loss of some existing on-street parking due to lane closures or other traffic controls. As described earlier under “Environmental Setting,” on-street parking is generally provided along all streets within and near the Project area, and there would likely be sufficient on-street parking capacity along unaffected segments of Middlefield Road and intersecting side streets to accommodate any parking demand displaced as a result of the temporary loss in on-street parking along Middlefield Road. While some of these spaces may be located slightly further away from Middlefield Road, they would still be well within walking distance of the businesses and other properties currently served by the on-street parking along Middlefield Road. In addition, the County has recently completed construction of a 44-space surface parking lot at the intersection of Middlefield Road and Second Avenue which would provide off-street parking options during construction.

Therefore, construction-related impacts on parking capacity would be less than significant. Implementation of Mitigation Measure TRA-1, as identified under Item 16.a above, would further reduce these less-than-significant impacts by requiring identification of contractor parking sites, if necessary, to reduce the temporary loss of on-street parking within the Project area.

Operation:

The Project would replace existing angled parking along Middlefield Road with 8-foot-wide parallel parking at the sidewalk curb, with a striped buffer between the parking spaces and the proposed bicycle lanes. Conversion from angled parking to parallel parking and the construction of new bulb-outs at selected intersections would result in the net loss of approximately 55 on-street parking spaces within the Project area. As part of a separate but related Project however, the County recently constructed a 44-space surface parking lot at Middlefield Road and Second Avenue and plans to construct another 16 spaces on a parcel along Berkshire Avenue. With the completion of these two off-street lots, there would

be a net increase of approximately four spaces in the available parking supply within and near the Project area over existing conditions, even with the loss of on-street parking associated with the Project. Therefore, operation-related impacts on parking capacity would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

County of San Mateo. 2017. *Middlefield Road Parking Lot Project Initial Study/Mitigated Negative Declaration*. Accessed March 6, 2018 at https://publicworks.smcgov.org/sites/publicworks.smcgov.org/files/Middlefield%20Rd%20Parking%20lot_NC.pdf.

4.17. Utilities and Services

Environmental Setting:

The following discussion provides an overview of water supply and conveyance facilities, stormwater drainage systems, sanitary sewer, and solid waste management in the Project area. As stated below, no impacts on wastewater treatment facilities would occur; therefore, this topic is not discussed further in the environmental setting.

Water Supply and Conveyance Facilities

Water supply to the Project area is provided by the California Water Service Company's (Cal Water's) Bear Gulch District. Approximately 89 percent of Bear Gulch District water supply is provided by water purchased by Cal Water from the SFPUC. The remaining 11 percent of the district's water supply demand is met by surface water diverted from Bear Gulch Creek, which is collected and treated at the Bear Gulch Reservoir and treatment plant in Atherton (Cal Water 2016).

Cal Water has sufficient water supplies to meet the water supply demands of the Bear Gulch District in normal water years. However, during single-dry and multiple-dry years, shortfalls in water supplies are projected to be 20 percent or more (Cal Water 2016).

The water distribution system within most of North Fair Oaks is owned and operated by Cal Water. The water system consists of a network of 4-inch through 10-inch water transmission pipelines located within public street rights-of-way (San Mateo County 2011a). Water is delivered to the system through various connections to SFPUC transmission pipelines and from the Bear Gulch Reservoir treatment system. An existing 8-inch water transmission pipeline is located in Middlefield Road.

Stormwater Drainage Systems

Two subsurface stormdrain collectors within the Project area. The curb-and-gutter system in northern portion of Middlefield Road drains towards Stanford Avenue's subsurface stormdrain, which conveys water to Bayfront Canal. The curb-and-gutter system in the southern portion of Middlefield Road drains towards Fifth Avenue's subsurface stormdrain, which conveys water to Atherton Channel. Bayfront Canal and Atherton Channel drain to the San Francisco Bay through Flood Slough. Please see Section 4.9, "Hydrology and Water Quality," for addition information on stormwater drainage systems in the Project area.

Sanitary Sewer

The San Mateo County Department of Public Works operates and maintains ten sanitary sewer districts throughout the County, including the Fair Oaks Sewer Maintenance District (FOSMD), which serves the Project area. The FOSMD serves approximately 7,200 customers in the unincorporated communities of North Fair Oaks and Sequoia Tract, portions of the City of Redwood City, and Towns of Atherton and Woodside. The collection system includes approximately 82 miles of 4- to 33-inch-diameter sewer

pipelines (RMC 2015). The system discharges to the City of Redwood City's collection system at Veterans Boulevard, from where it is conveyed to the Silicon Valley Clean Water (formerly South Bayside System Authority) interceptor system and treatment plant. The sanitary sewer along Middlefield Road within the Project area has been identified as priority for replacement (San Mateo County 2011b) due to structural deficiencies.

Solid Waste Management

Recology San Mateo County provides franchised recycling, compost, and trash collection services for the Project area. Recology currently hauls waste materials to the Shoreway Environmental Center, which then hauls by South Bay Recycling to the Ox Mountain Landfill, located approximately 2 miles northeast of Half Moon Bay.

Ox Mountain Landfill is the primary solid waste disposal facility in the County. The Ox Mountain Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, asbestos, green materials, agricultural debris, and other nonhazardous designated debris. According to the California Department of Resources Recycling and Recovery (CalRecycle), the Ox Mountain Landfill has a maximum permitted throughput of 3,598 tons per day, a total maximum permitted capacity of 60.5 million cubic yards, a remaining capacity of approximately 22.2 million cubic yards, and an anticipated closure date of January 1, 2034 (CalRecycle 2017).

Sources:

California Department of Resources Recycling and Recovery (CalRecycle). 2017. Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mountain). Available: http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/, accessed November 6, 2017.

California Water Service (Cal Water). 2016 (June). California Water Service Urban Water Management Plan. Bear Gulch District. Available: https://www.calwater.com/conservation/uwmp/bg/, accessed November 13, 2017.

RMC Water and Environment. 2015 (September). Fair Oaks Sewer Maintenance District Sewer Master Plan Update. Available: https://publicworks.smcgov.org/sites/publicworks.smcgov.org/files/Fair%20Oaks%20Capacity%20Analysis%20FINAL%20TM_wAppendices.pdf, accessed June 2018.

San Mateo County. 2011a (October). Final Environmental Impact Report for Proposed North Fair Oaks Community Plan Update. Available: http://planning.smcgov.org/north-fair-oaks-community-plan, accessed November 13, 2017.

San Mateo County. 2011b (November). North Fair Oaks Community Plan. Available: https://planning.smcgov.org/north-fair-oaks-community-plan, accessed November 13, 2017.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
17.a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒

Discussion:

Construction:

Construction of the Project would not generate wastewater that requires treatment. Therefore, construction of the Project would not result in wastewater discharges that exceed the San Francisco Bay Regional Water Quality Control Board's requirements.

Operation:

The Project would reconfigure Middlefield Road from a four-lane, two-way roadway to a three-lane

roadway. No new development is proposed that would generate wastewater that requires treatment. Therefore, operation of the Project would not result in wastewater discharges that exceed the San Francisco Bay Regional Water Quality Control Board's requirements.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
17.b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Discussion:

Construction:

As discussed under Items 17.a and 17.d, construction of the Project would not generate significant volumes of wastewater or generate demand for new water supplies. Therefore, expansion of existing or construction of new water or wastewater treatment facilities to serve Project construction would not be required and there would be no impact.

While the Project includes replacement of the existing sanitary sewer pipelines within Middlefield Road, such replacement would not require the expansion or construction of wastewater treatment facilities. Physical impacts on the environment from the replacement of existing sanitary sewer pipelines are assessed throughout this Initial Study in sections such as Section 4.3, "Air Quality," Section 4.5 "Cultural Resources," Section 4.9, "Hydrology and Water Quality," and other sections, which specifically analyze the potential impacts for Project construction.

Operation:

As discussed under Items 17.a and 17.d, operation of the Project would not include any new development that generates wastewater or generates demand for new water supplies. Therefore, expansion of existing, or construction of new, water or wastewater treatment facilities would not be required and there would be no impact.

Conclusion:

There would be no impacts from the Project.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
17.c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☒	☐	☐

Discussion:

Construction:

The Project would construct new stormwater drainage facilities that consist of small bioretention basins with vegetated permeable soils at each intersection and curb-and-gutter systems. Physical impacts associated with construction of stormwater facilities are evaluated throughout this Initial Study in sections such as Section 4.3, "Air Quality," Section 4.5, "Cultural Resources," Section 4.8, "Hazards and Hazardous Materials," Section 4.9, "Hydrology and Water Quality," and other sections, which specifically analyze the potential impacts of Project construction. Mitigation measures are identified for potentially significant impacts throughout this Initial Study so that those construction impacts would be reduced to a less-than-significant level.

Operation:

Post-construction drainage patterns would be similar to pre-Project conditions. Stormwater would sheet

flow from the sidewalks to the curb and gutter. The curb-and-gutter system in northern portion of the Project area would drain towards Stanford Avenue's subsurface stormdrain, which conveys water to Bayfront Canal. The curb-and-gutter system in the southern portion of the Project area would drain towards Fifth Avenue's subsurface stormdrain, which conveys water to Atherton Channel. A portion of the stormwater runoff would be detained in small bioretention basins at each street crossing. Impacts associated with increased stormwater runoff that could exceed the capacity of stormwater drainage systems and other water quality effects are addressed in Section 4.9, "Hydrology and Water Quality."

Conclusion:

With adherence to mitigation measures throughout this Initial Study, the construction-related impacts of the Project would be less than significant. The operational impacts would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
17.d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐

Discussion:

Construction:

Water demands during construction (for dust control, concrete mixing, etc.) would be met by existing service connections to municipal suppliers or water would be imported by truck. Construction demands for water supplies would be short term and small compared to the existing water supply demands for the Bear Gulch District. Therefore, construction of the Project would not substantially affect water supplies or result in new or expanded water supply entitlements.

Operation:

The Project would not include any new development that would increase the demand for water supplies. Water would be required for irrigation of new landscaping in the Project area. Street trees and shrubs would be climate appropriate and would have low-water requirements.

Cal Water's Bear Gulch District provides water supply to the Project area via an 8-inch water transmission pipeline in Middlefield Road. Although limited amounts of water would be required for landscape irrigation, the Project would not substantially affect water supplies nor would it require new or expanded entitlements.

Conclusion:

The impact would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
17.e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

Discussion:

Construction:

See response to Items 17.a and 17.b, above.

Operation:

See response to Items 17.a and 17.b, above.

Conclusion:

There would be no impacts from the Project.

Would the project: 17.f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☒	☐

Discussion:

Construction:

Implementation of the Project would generate temporary and short-term debris and waste during construction. Construction of the Project could include concrete, asphalt, metal, pipes, plastics, soils, tree remains, and various other materials.

The County requires all contractors to comply with Chapter 4.105, "Recycling and Diversion of Debris from Construction and Demolition," of the San Mateo County Code of Ordinances. The County requires contractors to prepare a waste management plan that reduces project waste entering landfill facilities by 65 percent by weight through recycling. The construction contractor must identify the sources of recyclable materials and a recycling method (i.e., self-separation or mixed recovery) and dispose of construction debris at County-approved facilities, including the Ox Mountain Landfill, San Carlos Transfer Station, Blue Line Transfer Station, Brisbane Recycling Company, or other County-approved recycling centers listed in the County's guide for construction and demolition projects (San Mateo County 2017).

Compliance with Chapter 4.105 the County's Code of Ordinances and preparation of a waste management plan would ensure construction debris is disposed of at a landfill with sufficient capacity to accommodate solid-waste disposal needs of the Project. The construction-related impacts would be less than significant.

Operation:

Recology San Mateo County would provide trash collection services for the Project area. Recology currently hauls waste materials to the Shoreway Environmental Center, and then South Bay Recycling hauls the wastes to the Ox Mountain Landfill. The Ox Mountain Landfill has a remaining capacity of approximately 22.2 million cubic yards, and an anticipated closure date of 2034 (CalRecycle 2017).

The Project would not include any new development that would generate solid waste. Operation of the Project would generate similar amounts and types of solid waste as compared to existing conditions. Therefore, sufficient landfill capacity would be available to accommodate solid-waste disposal needs for the Project and the impacts would be less than significant.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Sources:

California Department of Resources Recycling and Recovery (CalRecycle). 2017. Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mountain). Available: http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/, accessed November 6, 2017.

San Mateo County. 2017 (August). Construction, Demolition, and Deconstruction Information. Available: http://www.smcsustainability.org/download/waste-reduction/CD_2017-Web.pdf, accessed November 6, 2017.

Would the project: 17.g. Comply with federal, state, and local statutes and regulations related to solid waste?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☒	☐

Discussion:

Construction:

The Project does not include any components that would violate any applicable federal, state, or local solid waste regulations. The Project would comply with all statutes and regulations related to solid waste, including the County's the Construction and Demolition Debris Recycling Ordinance. Also see response to Item 17.f, above.

Operation:

See response to Item 17.f, above.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project: 17.h. Be sited, oriented, and/or designed to minimize energy consumption, including transportation energy; incorporate water conservation and solid waste reduction measures; and incorporate solar or other alternative energy sources?	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
	☐	☐	☒	☐

Discussion:

Construction:

Construction of the proposed would increase the consumption of energy for the duration of construction. The primary energy demands during construction would be associated with construction equipment and vehicle fueling. Energy in the form of fuel would be consumed during this period by construction vehicles and equipment operating on-site, trucks delivering equipment and supplies to the site, and construction workers driving to and from the Project area. The use of construction equipment would not be less energy-efficient compared to other construction sites in the County. The average number of construction workers needed to implement Project improvements would be small (approximately 30), and construction activities would occur over a limited period (approximately 12 to 18 months). Finite amounts of water would be used during Project construction (see Item 17.d, above). Furthermore, the construction contractor would be required to comply with Chapter 4.105, "Recycling and Diversion of Debris from Construction and Demolition," of the San Mateo County Code of Ordinances, which requires project waste entering landfill facilities be reduced by 65 percent by weight through recycling (see Item 17.f, above). As a result of these efforts and practices, Project construction would not substantially affect energy consumption during construction of the Project.

Operation:

The Project would not include any new development that would increase energy consumption. The Project would reconfigure Middlefield Road from a four-lane, two-way roadway to a three-lane roadway, place existing utilities underground, and replace the existing sanitary sewer system. The Project would provide mobility improvements for non-motorized roadway users such as pedestrians and bicyclists. Water would be required for irrigation of new landscaping and street trees and shrubs would be climate appropriate and would have low-water requirements (see Item 17.d, above). New LED street lighting would be more energy efficient than the existing lighting. As such, Project operation would not substantially affect energy consumption.

Conclusion:

The Project impacts would be less than significant and no mitigation would be required.

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
17.i. Generate any demands that will cause a public facility or utility to reach or exceed its capacity?	☐	☐	☐	☒

Discussion:

Construction:

Construction of the Project would not include any new development that generates demand for utility services. Therefore, construction of the Project would not result in demands that cause a public facility or utility to exceed its capacity and there would be no impact.

Operation:

The Project would reconfigure Middlefield Road from a four-lane, two-way roadway to a three-lane roadway. No new development is proposed that would generate demands for new utility services. As discussed in items 17.a to 17.f, above, the Project would not generate new demands for water or wastewater treatment, water supplies, stormwater drainage facilities, sanitary sewers, or landfill capacity. Therefore, operation of the Project would not result in demands that cause a public facility or utility to exceed its capacity, and there would be no impact.

Conclusion:

There would be no impacts from the Project.

4.18. Mandatory Findings of Significance

Would the project:	Potentially Significant Impact	Significant Unless Mitigated	Less Than Significant Impact	No Impact
18.a. Does the project have the potential to 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, 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?	☐	☒	☐	☐

Discussion:

Based upon background research, site visits, and the analysis herein, the Project does not have the potential to 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, or reduce the number or restrict the range of a rare or endangered plant or animal. As discussed above in Section 4.4, “Biological Resources,” implementation of mitigation measures relating to nesting birds would reduce such impacts on biological resources to less than significant.

Based upon background research, site visits, and the analysis herein, the Project does not have the potential to eliminate important examples of the major periods of California history or prehistory. As discussed above in Section 4.5, ”Cultural Resources,” implementation of mitigation measures relating to accidental discovery of unknown archaeological resources would reduce such impacts on cultural resources to less than significant.

Conclusion:

The Project impacts would be less than significant with mitigation.

Would the project: 18.b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probably future projects)?	Potentially Significant Impact ☐	Significant Unless Mitigated ☒	Less Than Significant Impact ☐	No Impact ☐

Discussion:

Consideration of past, present, and reasonably foreseeable projects in the Project area and vicinity indicate that implementation of the Project would have a less-than-significant impact.

The Project would not have impacts to agriculture or forestry resources, mineral resources, or recreational resources that would combine with other projects. The proposed activities could have potential impacts with respect to aesthetics, biological and cultural resources, geology, hazards and hazardous materials, hydrology and water quality, land use and planning, population and housing, public services, and utilities and service systems. However, such impacts would be limited to the Project area and, where necessary, mitigated such that they would not substantially combine with other off-site impacts.

The Project's potential impacts with respect to air quality, climate change/greenhouse gas emissions, and transportation and traffic, however, could extend beyond the Project area to combine with impacts from other projects. As described in Sections 4.3 and 4.7, "Air Quality" and "Climate Change/Greenhouse Gas Emissions," respectively, the BAAQMD considered the emission levels at which a project's individual emissions would be cumulatively considerable in developing its CEQA significance thresholds. The BAAQMD considers projects that result in emissions that exceed its CEQA significance thresholds to result in individual impacts that are cumulatively considerable and significant. As discussed above in those sections, the Project's emissions would be limited to the construction period and would be below the BAAQMD cumulatively considerable threshold. Similarly, cumulative impacts of the Project with other reasonably foreseeable projects and development in relation to transportation and traffic have been taken into consideration in Section 4.16, "Transportation and Traffic" (see also Appendix D).

For the reasons presented above, the Project would not be expected to result in adverse impacts to human beings, either directly or indirectly. All impacts identified in this document would be less-than-significant, or would be reduced to less-than-significant levels with implementation of mitigation measures, and the Project's incremental contribution to potential cumulative impacts would not be cumulatively considerable.

Conclusion:

The Project impacts would be less than significant with mitigation.

Would the project: 18.c. Does the project have environmental effects which will cause significant adverse effects on human beings, either directly or indirectly?	Potentially Significant Impact ☐	Significant Unless Mitigated ☒	Less Than Significant Impact ☐	No Impact ☐

Discussion:

Based upon background research, site visits, and the analysis herein, construction and/or operation of the Project could potentially cause substantial adverse effects on human beings in relation to air quality, hazardous materials, water quality, noise, and traffic. However, mitigation measures designed to minimize environmental effects in relation to these topics are listed in the relevant sections of this Initial Study, and such mitigation measures would reduce the potential impacts to a less-than-significant level.

Conclusion:

The Project impacts would be less than significant with mitigation.

This page intentionally left blank

5. Responsible Agencies

Check what agency has permit authority or other approval for the Project.

AGENCY	YES	NO	TYPE OF APPROVAL
U.S. Army Corps of Engineers (USACE)		✓	
State Water Resources Control Board	✓		Construction General Permit (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended)
Regional Water Quality Control Board		✓	
State Department of Public Health		✓	
San Francisco Bay Conservation and Development Commission (BCDC)		✓	
U.S. Environmental Protection Agency (EPA)		✓	
County Airport Land Use Commission (ALUC)		✓	
CalTrans		✓	
Bay Area Air Quality Management District		✓	
U.S. Fish and Wildlife Service		✓	
Coastal Commission		✓	
City		✓	
Sewer/Water District:		✓	
Other:			
San Francisco Public Utilities Commission (SFPUC)	✓		Permit to cross the Hetch Hetchy Right-of-Way
Union Pacific Railroad (UPRR)	✓		Encroachment Permit

This page intentionally left blank

6. Mitigation Measures

	Yes	No
Mitigation measures have been proposed in project application.		X
Other mitigation measures are needed.	X	

The following measures are included in the Project plans or proposals pursuant to Section 15070(b)(1) of the State CEQA Guidelines:

Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures. *The County shall include the following measures in contractor specifications for the Project, and such measures shall be implemented during all phases of construction:*

- *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.*
- *All haul trucks transporting soil, sand, or other loose material shall be covered.*
- *All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.*
- *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.*
- *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads will be laid as soon as possible after grading, unless seeding or soil binders are used.*
- *Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.*
- *All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.*
- *A publicly visible sign shall be posted at the Project construction site(s) with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number also shall be visibly posted, for compliance with applicable regulations.*

Mitigation Measure BIO-1: Nesting Birds: *Project construction activities, particularly any tree trimming or removal (if necessary), shall be timed to avoid the bird nesting season (February 1st through August 31st) when possible. If construction activities are scheduled during the nesting season, a qualified biologist shall conduct a preconstruction survey at least two weeks prior to commencement of construction activities to identify any potential nesting activity. If the survey indicates the presence of nesting birds, protective buffer zones shall be established around the nests. The size of the buffer zone shall be recommended by the biologist in consultation with the CDFW depending on the species of nesting bird and level of potential disturbance. The buffer zones shall remain in place until the young have fledged and are foraging independently. A qualified biologist shall monitor the nests closely until it is determined the nests are no longer active, at which time construction activities may commence within the buffer area.*

Mitigation Measure CUL-1: Treatment of Unanticipated Archaeological Discoveries: *If unanticipated prehistoric or historic-period archaeological resources are encountered during future construction within the Community Plan area, work shall be temporarily halted in the vicinity of the discovered materials and workers shall avoid altering the materials and their context*

until a qualified professional archaeologist has evaluated, recorded and determined appropriate treatment of the resource, in consultation with the County. Project personnel shall not collect cultural resources. Cultural resources shall be recorded on California Department of Parks and Recreation (DPR) 523 historic resource recordation forms. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies. If it is determined that the proposed development could damage a unique archaeological resource, mitigation shall be implemented in accordance with Public Resources Code Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. This measure would reduce the potential impact on archaeological resources to a ***less-than-significant*** *level.*

Mitigation Measure CUL-2: Treatment of Human Remains: *If human remains of Native American origin are discovered during construction of the Project, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC) (Public Resources Code Section 5097). If any human remains are discovered in any location in the Project area, there will be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:*

- *The San Mateo County coroner has been informed and has determined that no investigation of the cause of death is required; and*
- *If the remains are of Native American origin:*
    - *The descendants of the deceased Native Americans have made a recommendation regarding the disposition of remains and any associated grave goods, as provided in Public Resources Code Section 5097.98; or*
    - *The NAHC was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified.*

Mitigation Measure HAZ-1: Environmental Site Investigation *Prior to the issuance of a grading permit and before any substantial ground disturbance within the areas specified below, the County shall hire a qualified environmental professional to conduct a Phase II environmental site investigation to determine the potential presence of metals and organic compounds in soil and groundwater within the railroad ROW or within 100 feet of the following properties:*

- *2655 Middlefield Road (Geotracker Case T0608100544: Tilton Properties)*
- *2682 Middlefield Road (Geotracker Case T0608100066: Beals and Martin Associates)*
- *3157 Middlefield Road (Geotracker Case T0608100218: Figueras Property)*
- *3233 Middlefield Road (Geotracker Case T0608152727: Zohrab's Garage).*

The Phase II ESA shall compare soil and groundwater sampling results against applicable environmental screening levels developed by the Regional Water Quality Control Board and/or Department of Toxic Substances Control. If the Phase II investigation identifies contaminant concentrations above the screening levels, a site-specific soil and groundwater management plan shall be prepared and implemented. The County shall consult with the RWQCB, DTSC, and/or other appropriate regulatory agencies to ensure sufficient minimization of risk to human health and the environment is completed. The site-specific soil and groundwater management plan shall be formulated with the objective of handling and disposing of excavated soil, groundwater, and/or dewatering effluent in accordance with federal and state hazardous waste disposal laws, and with state and local stormwater and sanitary sewer requirements, and at a minimum, shall include the following:

- *Identification and delineation of contaminated areas and procedures for limiting access to such areas to properly trained personnel;*
- *Procedures for handling, excavating, characterizing and managing excavated soils and dewatering effluent including potential procedures for managing and disposing of hazardous waste;*
- *Procedures for notification and report, including internal management and local agencies, as needed;*
- *Minimum requirements for site-specific health and safety plans, to protect the general public and workers in the construction area (note: these requirements and the environmental sampling results shall be provided to contractors who shall be responsible for developing their own construction worker health and safety plans and training requirements).*

Mitigation Measure HAZ-2: Contractor Specifications. *The County shall include the following measures in its contractor specifications, and such measures shall be implemented by the contractor(s) during construction:*

- *During all ground-disturbing activities throughout the Project area, the Contractor(s) shall inspect the exposed soil and groundwater for obvious signs of contamination, such as odors, stains, or other suspect materials. Should signs of unanticipated contamination be encountered, work will be suspended, San Mateo County Department of Environmental Health (SMCDEH) will be notified, and the area secured. An investigation shall be designed and performed to verify the presence and extent of contamination at the site, and a site-specific soil and groundwater management plan, as described under Mitigation Measure HAZ-1 above, shall be prepared and implemented.*
- *Prior to commencement of construction activities, the Contractor shall prepare and implement a site-specific health and safety plan (HASP), in accordance with State and federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910.120). Copies of the HASP shall be made available to construction workers for review during their orientation and/or regular health and safety meetings, and a copy provided to the County Department of Public Works (DPW). The HASP shall be amended, as necessary, if new information becomes available that could affect implementation of the plan.*

Mitigation Measure NOI-1: Limitations on Construction Activities Generating Excessive Vibration. *The County shall include the following measures in its contractor specifications, and such measures shall be implemented by the contractor(s) during construction:*

a) Operation of construction equipment shall be prohibited within the following specified distances of adjacent building facades, per the following categories, unless the precautions in subsection (b) below are implemented:

- 15 feet for large bulldozers (and comparable large mobile equipment/vehicles having a reference PPV of 0.089 inches per second at 25 feet, per FTA guidance);
- 8 feet for jackhammers (and comparable portable vibratory equipment having a reference PPV of 0.035 inches per second at 25 feet, per FTA guidance); and
- D feet for any other vibratory equipment having a reference PPV of X inches per second vibration velocity at 25 feet, that satisfies the following expression: 0.2 inches per second = X * (25/D)^1.5.

b) If the restrictions within subsection (a) above cannot be achieved, the following measures shall be implemented by a qualified professional:

- Pre-construction inspections of the facades of adjacent buildings within the specified

distances to document pre-construction conditions.

- Daily inspections of the facades of adjacent buildings during use of heavy or vibratory equipment within the specified distances, to document any construction-related vibration damage.
- If any construction-related damage is observed, work within the specified distances shall be suspended immediately, and shall not be resumed until a vibratory mitigation monitoring plan is prepared by a qualified professional, and the recommendations of the plan are implemented by the Contractor to limit the likelihood of further damage. The Contractor shall be responsible for repairing any construction-related vibratory damage to building facades to pre-construction conditions.

Mitigation Measure NOI-2: *The County shall include the following measures in its contractor specifications, and such measures shall be implemented by the contractor(s) during construction:*

- *Per San Mateo County's Municipal Code, construction activities shall be limited to the hours of 7 a.m. to 6 p.m. on weekdays, 9:00 am to 5:00 pm on Saturdays. Construction activities are prohibited at any time on Sundays, Thanksgiving, and Christmas.*
- *Provide written notification of construction activities and schedule to all noise-sensitive receptors adjacent to the Project area. The notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the Project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall be included in the notification.*
- *Prohibit unnecessary idling of internal combustion engines. Equip all equipment driven by internal combustion engines with mufflers which are in good mechanical condition, appropriate for the equipment, and no less effective that those originally installed by the manufacturer.*
- *Utilize "quiet" air compressors and other stationary noise sources where technology exists. Use electrically powered equipment instead of internal combustion equipment where practicable and feasible.*
- *Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors and place equipment so that emitted noise is directed away from nearby sensitive receptors.*
- *Construct temporary noise barriers, where feasible, to screen stationary noise-generating equipment when located within 200 feet of adjoining sensitive land uses. Temporary noise barrier fences would provide a 5-15 dBA noise reduction if the noise barrier interrupts the line-of-sight between the noise source and receiver and if the barrier is constructed in a manner that eliminates any cracks or gaps.*
- *Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the Project area.*
- *Equip concrete saws (or similar portable/mobile equipment) with modern noise-reducing blades; and, install sound-absorptive and sound-blocking shrouds or temporary barriers (e.g., curtains or blankets suspended from portable field-erected framing systems, such as EchoBarrier or comparable commercially-available products and assemblies) that can be readily moved—and thus stay in proximity to the concrete saw—as work progresses to different locations on the Project area.*
- *Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of*

the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Mitigation Measure TRA-1: Traffic Control Plan. *The Construction Contractor shall be responsible for preparing and implementing a Traffic Control Plan (TCP) approved by the County , prior to the start of construction. The TCP shall include traffic control measures to ensure the safety of all roadway users (including motorists, transit riders, bicyclists, and pedestrians) and minimize disruptions to traffic, transit, bicycle, and pedestrian circulation during the construction period.*

Towards the above goals, the TCP shall include, but not be limited to, the following provisions:

- *Identification of required temporary traffic control devices (as determined necessary by the County), including signage, delineators, flashing arrows, and/or temporary pavement markings (e.g., lane striping).*
- *Advance notification (signage) to notify all roadway users of major construction activities (e.g., lane closures, bus stop relocations) and other associated information (e.g., recommended detour routes).*
- *Coordination with transit service providers (i.e., SamTrans) to identify potential effects to transit access or operations and potential solutions to address these issues (e.g., relocation of bus stops).*
- *Coordination with County and local emergency service providers (e.g., police, fire, and medical) to minimize effects on response times through the Project area (e.g., identification of detour routes) and maintenance of emergency vehicle access for properties adjacent to or in the vicinity of the Project area at all times.*
- *Identification of locations for contractor parking (e.g., existing on- and/or off-street facilities, staging areas within the Middlefield Road ROW, etc.), if necessary, to minimize the loss of on-street parking capacity within the Project area during construction.*
- *Identification of construction equipment/material delivery procedures and staging areas.*
- *Restrictions on construction truck traffic to and from the site during the weekday AM and PM peak periods, when feasible.*
- *Deployment of flaggers and appropriate signage to ensure the safety of all roadway users during lane closures.*
- *Notification to adjacent property owners and public safety personnel regarding schedules for major deliveries, recommended detour routes, and other construction effects (e.g., lane/sidewalk closures).*
- *Identification of designated routes for construction trucks traveling to/from the site and monitoring of pavement quality along these routes so that damage and debris attributable to construction trucks can be identified and corrected by the Construction Contractor.*
- *Procedures for granting access to delivery trucks and service vehicles to businesses within the active construction segment during construction hours, including signage, barricades, use of flaggers; and for maintaining access after hours and/or during weekends when construction personnel are not present.*

Mitigation Measure TRA-2: Middlefield Road/Fifth Avenue Intersection Improvements. *To mitigate the Project's LOS impacts at the Middlefield Road/Fifth Avenue intersection, the County Department of Public Works shall fund and implement the following improvements such that the increase in average peak-hour delay over 2020 No Build conditions would be less than 4*

seconds:

1) *Re-stripe the eastbound and westbound approaches of Fifth Avenue to include a left-turn pocket and a shared through/right-turn lane; and*

2) *Modify signal timing.*

Mitigation Measure TRA-3: Monitoring and Improvements at Middlefield Road/Berkshire Avenue, Middlefield Road/First Avenue, Middlefield Road/Sixth Avenue, Middlefield Road/Seventh Avenue, and El Camino Real/Fifth Avenue. *The County Department of Public Works shall monitor traffic delay at the five intersections listed above to determine when a significant impact would be triggered. Monitoring shall be performed every five years, starting in 2021 or one year following completion of Project construction (whichever is later), and a monitoring report shall be prepared for the County Department of Public Works. The monitoring reports shall include, but not be limited to, a narrative of the site conditions, the method of determining average traffic delay, the results of the monitoring program, and a comparison to 2050 No Build conditions as described in the traffic study. If monitoring at any of these intersections shows that the traffic delays would exceed the 2050 No Build Conditions by more than 4 seconds, the County Department of Public Works would fund and implement actions or improvements to decrease the average delay at those intersections to no more than 4 seconds above the delay under 2050 No Build conditions.*

The following suggested improvement actions have been identified for each intersection, and have been assessed as being sufficient to mitigate Project impacts to less-than-significant levels:

- *Middlefield Road/Berkshire Avenue: Installation of a traffic signal.*
- *Middlefield Road/First Avenue: Installation of a traffic signal.*
- *Middlefield Road/Sixth Avenue: Installation of a traffic signal.*
- *Middlefield Road/Seventh Avenue: Modification of the eastbound approach (driveway) to right-turn-only egress (i.e., prohibition of left-turn and through movements out of the driveway).*
- *El Camino Real/Fifth Avenue: Addition of a second westbound left-turn pocket.*

With the installation of each traffic signal (or combination of traffic signals), the County Department of Public Works shall re-evaluate traffic operations at nearby upstream and downstream intersections within the corridor, consistent with standard traffic engineering practice. This exercise would determine appropriate signal timing offsets or other specific design considerations, if warranted, to address any secondary impacts to traffic circulation.

However, it is possible that at such future time when improvements are required to be implemented, the County Department of Public Works may seek to implement alternate improvement actions to mitigate the impacts. If so, the County DPW shall analyze the alternate improvements prior to implementation to document that they would achieve the same performance standard as the suggested improvements by reducing the average delay to no more than 4 seconds above the delay under 2050 No Build conditions.

7. Determination

(to be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

Signature
County of San Mateo

8-14-18
Date

Director of Public Works
Title

James C. Porter
Printed Name

This page intentionally left blank.

Appendices - see separate PDF files

Appendix A – 90% Design Drawings
Appendix B – Air Quality and Greenhouse Gas Appendix
Appendix C – Noise Appendix
Appendix D – Transportation and Traffic Appendix

AECOM
100 West San Fernando
San Jose
CA, 95113
USA
aecom.com