Initial Study

Fisher Creek Detention Basin Expansion

Prepared by

CITY OF MORGAN HILL

In Consultation with

DAVID J. POWERS & ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS & PLANNERS

June 2021

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SECTION 1.0 INTRODUCTION AND PURPOSE

1.1 PURPOSE OF THE INITIAL STUDY

The City of Morgan Hill, as the Lead Agency, has prepared this Initial Study for the Fisher Creek Detention Basin Expansion in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations §15000 et. seq.) and the regulations and policies of the City of Morgan Hill, California.

The project proposes to excavate 81,000 cubic yards of soil from the existing Fisher Creek Detention Basin to increase its capacity for stormwater detention. This Initial Study evaluates the environmental impacts that might reasonably be anticipated to result from implementation of the proposed project.

1.2 PUBLIC REVIEW PERIOD

Publication of this Initial Study marks the beginning of a 30-day public review and comment period. During this period, the Initial Study will be available to local, state, and federal agencies and to interested organizations and individuals for review. Written comments concerning the environmental review contained in this Initial Study during the30-day public review period should be sent to:

City of Morgan Hill
Chris Ghione, Director of Public Works
17575 Peak Avenue
Morgan Hill, CA 95037
Chris.Ghione@morganhill.ca.gov

1.3 CONSIDERATION OF THE INITIAL STUDY AND PROJECT

Following the conclusion of the public review period, the City of Morgan Hill will consider the adoption of the Initial Study/Mitigated Negative Declaration (MND) for the project at a regularly scheduled meeting. The City shall consider the Initial Study/MND together with any comments received during the public review process. Upon adoption of the MND, the City may proceed with project approval actions.

1.4 NOTICE OF DETERMINATION

If the project is approved, the City of Morgan Hill will file a Notice of Determination (NOD), which will be available for public inspection and posted within 24 hours of receipt at the County Clerk's Office for 30 days. The filing of the NOD starts a 30-day statute of limitations on court challenges to the approval under CEQA (CEQA Guidelines Section 15075(g)).

SECTION 2.0 PROJECT INFORMATION

2.1 PROJECT TITLE

Fisher Creek Detention Basin

2.2 LEAD AGENCY CONTACT

City of Morgan Hill
Chris Ghione, Director of Public Works
17575 Peak Avenue
Morgan Hill, CA 95037
Chris.Ghione@morganhill.ca.gov

2.3 PROJECT APPLICANT

City of Morgan Hill

2.4 PROJECT LOCATION

East side of Monterey Road, approximately 500 feet south of Jarvis Drive, across the street from 18300 Old Monterey Road, Morgan Hill, CA 95037

2.5 ASSESSOR'S PARCEL NUMBER

726-25-028

2.6 GENERAL PLAN DESIGNATION AND ZONING DISTRICT

Open Space (OS) General Plan and Zoning Designation

2.7 HABITAT PLAN DESIGNATION

Pond

2.8 PROJECT-RELATED APPROVALS, AGREEMENTS, AND PERMITS

Grading Permit

SECTION 3.0 PROJECT DESCRIPTION

Project Overview

The City of Morgan Hill owns and operates a regional drainage basin located east of the railroad tracks between Monterey Road and Butterfield Boulevard, North of Digital Drive and South of Jarvis Drive. The basin provides stormwater detention[1] for the Morgan Hill Ranch Business Park. The existing basin is approximately 7.5 acres at the top rim, 13.7 feet deep, and can hold approximately 43.9 acre-feet of water with no overflow.

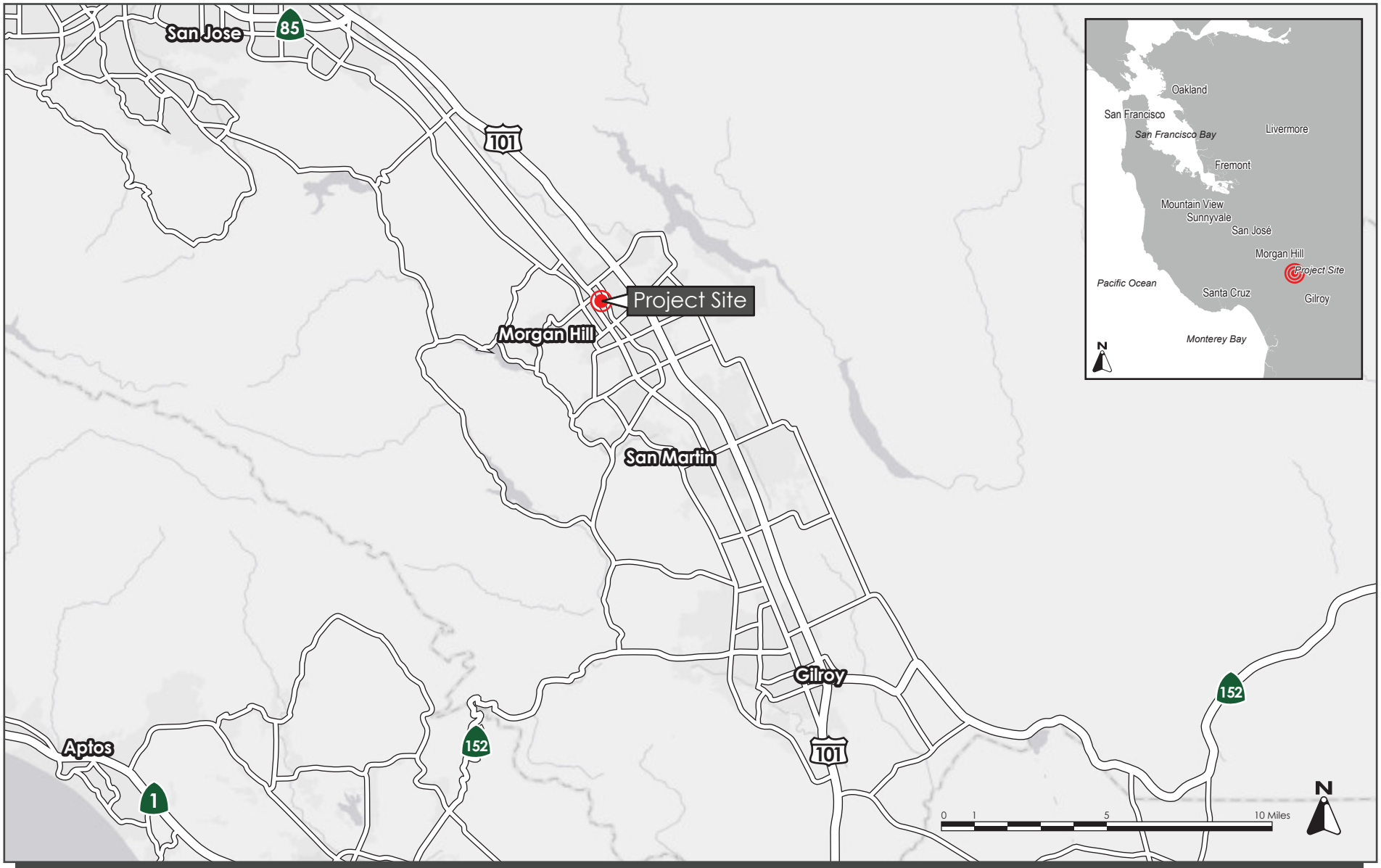
To meet future detention and retention needs of the City in the Coyote Creek Watershed area, based upon new estimates of future rainfall load, the City desires to excavate approximately 10 feet of material out of the existing basin to increase the depth from 13.7 feet to 23.7 feet, and introduce more storage capacity. The project would excavate approximately 50,000 cubic yards (CY) of soil over the course of five weeks. This material would be excavated from the toe of the slopes, an area of roughly 2.77 acres, rendering the basin bottom 10 feet lower than the existing elevation. The proposed project would result in the removal of 56 trees on site, including 37 red willows and 19 Fremont cottonwoods. Materials from the excavation would be disposed at the Kirby Canyon Landfill or, if determined appropriate to serve as construction fill, sent to a development site in the City in need of surplus soil, which would reduce the length of trips (compared to Kirby Canyon) needed to deposit and dispose of the dirt this summer. Construction activities would occur from 7 am to 5 pm on weekdays utilizing one large excavator, one dozer, and one grader on site.

The location of the project in a regional and local context can be seen in Figures 3.0-1, 3.0-2, and 3.0-3. The extent of the project design can be seen in Figure 3.0-4

Haul Route

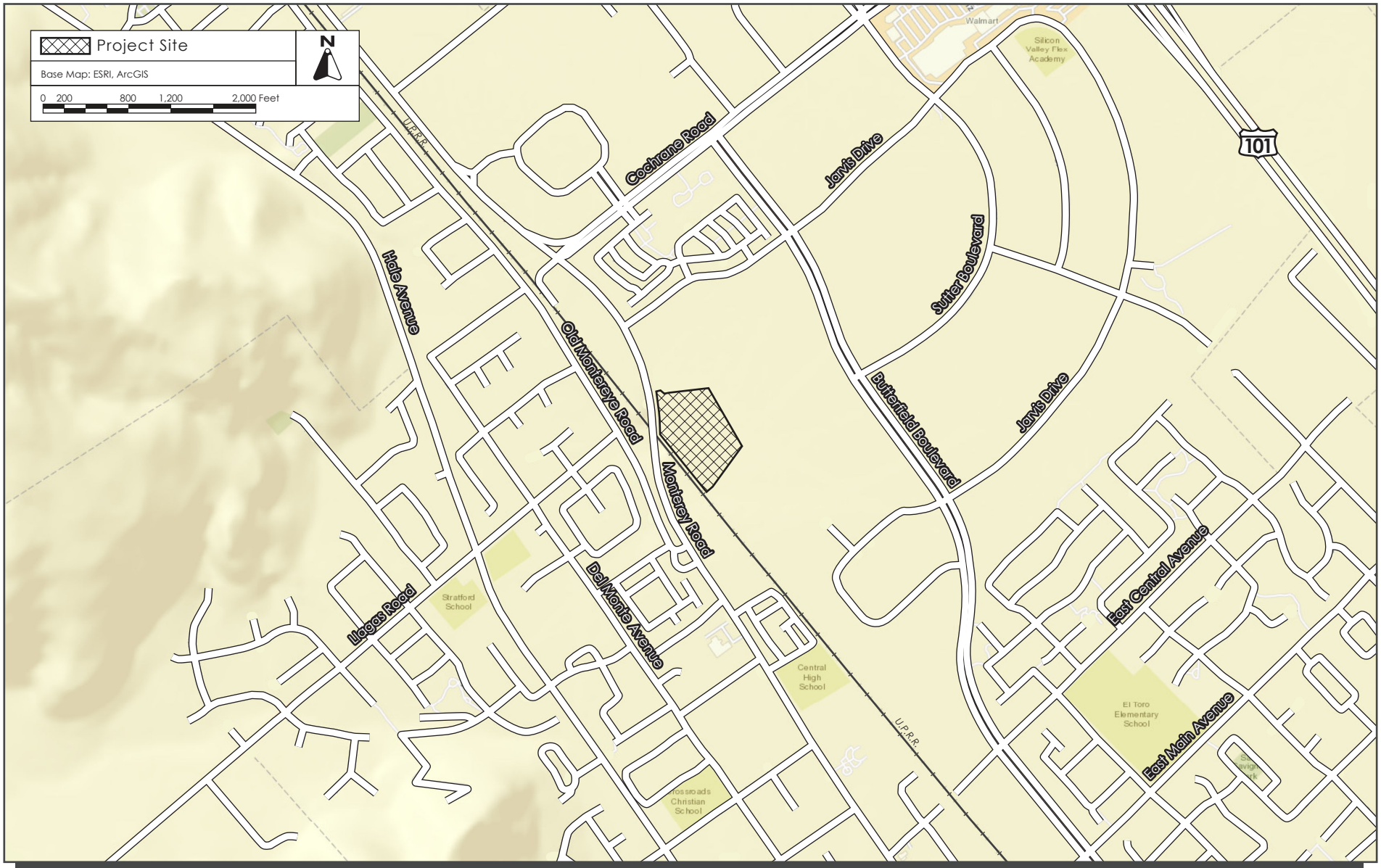
The project proposes the haul route travel from Jarvis Drive to Monterey Road to Cochrane Road. This would then utilize the US 101 freeway to transport the material to its disposal site. Alternatively, the proposed project would use the new Sutter Blvd extension and travel from Butterfield Boulevard to Cochrane Road to reach the US 101 freeway. Approximately 8,400 truck haul trips would be required for the proposed project. No staging area is proposed.

[1] A detention basin has an inlet and outlet which can release water, while a retention basin only has an inlet and retains the water that enters the basin.



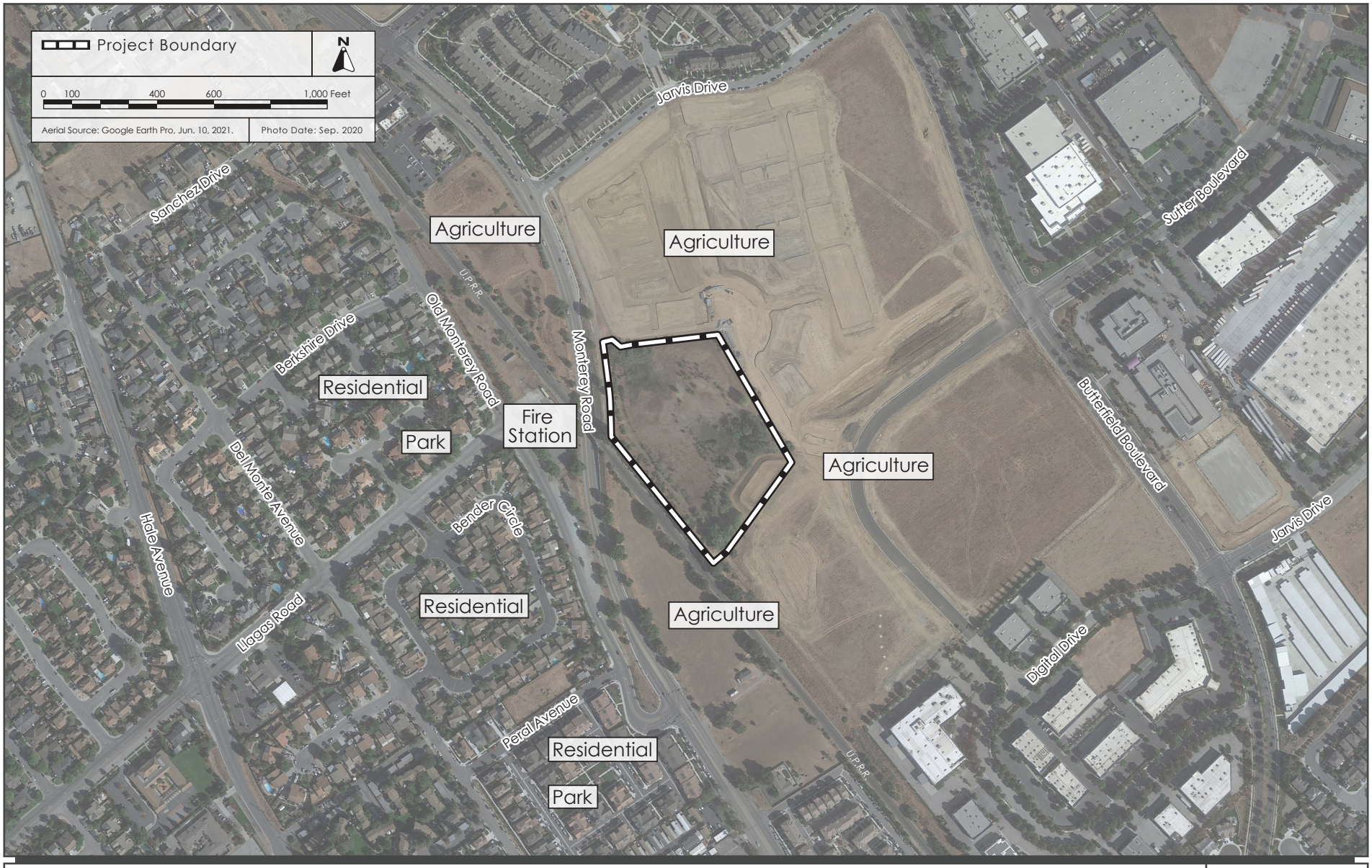
REGIONAL MAP

FIGURE 3.0-1



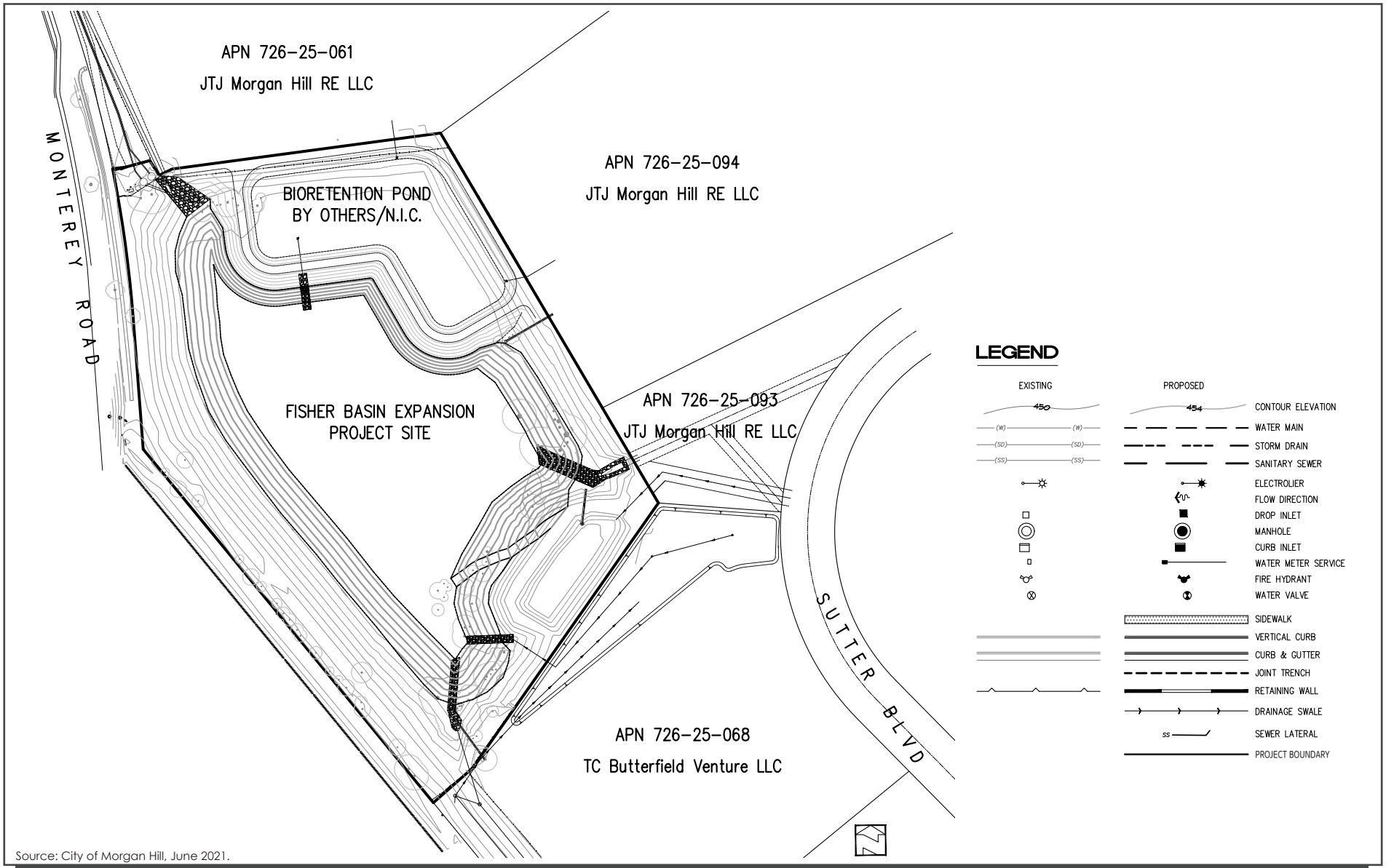
VICINITY MAP

FIGURE 3.0-2



AERIAL PHOTOGRAPH AND SURROUNDING LAND USES

FIGURE 3.0-3



Source: City of Morgan Hill, June 2021.

SITE DESIGN

FIGURE 3.0-4

SECTION 4.0 ENVIRONMENTAL SETTING, CHECKLIST, AND IMPACT DISCUSSION

This section presents the discussion of impacts related to the following environmental subjects in their respective subsections:

4.1	Aesthetics	4.12	Mineral Resources
4.2	Agriculture and Forestry Resources	4.13	Noise
4.3	Air Quality	4.14	Population and Housing
4.4	Biological Resources	4.15	Public Services
4.5	Cultural Resources	4.16	Recreation
4.6	Energy	4.17	Transportation
4.7	Geology and Soils	4.18	Tribal Cultural Resources
4.8	Greenhouse Gas Emissions	4.19	Utilities and Service Systems
4.9	Hazards and Hazardous Materials	4.20	Wildfire
4.10	Hydrology and Water Quality	4.21	Mandatory Findings of Significance
4.11	Land Use and Planning		

The discussion for each environmental subject includes the following subsections:

- **Environmental Setting** – This subsection 1) provides a brief overview of relevant plans, policies, and regulations that compose the regulatory framework for the project and 2) describes the existing, physical environmental conditions at the project site and in the surrounding area, as relevant.
- **Impact Discussion** – This subsection 1) includes the recommended checklist questions from Appendix G of the CEQA Guidelines to assess impacts and 2) discusses the project's impact on the environmental subject as related to the checklist questions. For significant impacts, feasible mitigation measures are identified. "Mitigation measures" are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guidelines Section 15370). Each impact is numbered to correspond to the checklist question being answered. For example, Impact BIO-1 answers the first checklist question in the Biological Resources section. Mitigation measures are also numbered to correspond to the impact they address. For example, MM BIO-1.3 refers to the third mitigation measure for the first impact in the Biological Resources section.

4.1 AESTHETICS

4.1.1 Environmental Setting

4.1.1.1 *Regulatory Framework*

State

Streets and Highway Code Sections 260 through 263

The California Scenic Highway Program (Streets and Highway Code, Sections 260 through 263) is managed by the California Department of Transportation (Caltrans). The program is intended to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. There are no state-designated scenic highways in Morgan Hill. Interstate 280 from the San Mateo County line to State Route (SR) 17, which includes segments in Morgan Hill, is an eligible, but not officially designated, State Scenic Highway.[2]

In Santa Clara County, the one state-designated scenic highway is SR 9 from the Santa Cruz County line to the Los Gatos City Limit. Eligible State Scenic Highways (not officially designated) include: SR 17 from the Santa Cruz County line to SR 9, SR 35 from Santa Cruz County line to SR 9, Interstate 280 from the San Mateo County line to SR 17, and the entire length of SR 152 within the County.

4.1.1.2 *Existing Conditions*

Existing Aesthetic Environment

The project site is a city owned detention basin located approximately 90 feet from the edge of Monterey Road, approximately 500 feet south of Jarvis Drive. The area around the basin is undeveloped lots containing grass and small shrub like vegetation. The basin is separated from Monterey Road by a retaining wall, as Monterey Road is depressed below grade under the railroad overcrossing, which blocks views of vehicles traveling on Monterey Road; however the basin can be seen from the residences on Old Monterey Road, at a distance of about 300 feet. The basin is vegetated containing some medium sized trees and is dry a majority of the year.

Scenic Resources

Scenic resources in the City of Morgan Hill include hillsides that flank the City to the east and west. Additionally, the General Plan identifies a Greenbelt intended to separate the City from San José and San Martin. The project site is not within the defined areas or scenic resources as established in the General Plan.[3]

[2] California Department of Transportation. ”Scenic Highways.” Accessed December 10, 2020. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.
[3] City of Morgan Hill. 2035 General Plan. July 27, 2016. http://www.morganhill.ca.gov/75/General-Plan.

4.1.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
1) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
3) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? [4] If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Impact AES-1: The project would not have a substantial adverse effect on a scenic vista. (No Impact)

The proposed project would deepen the existing stormwater basin by approximately 10 feet and remove some of the existing vegetation within the basin. The trees which would be removed from the bottom of the basin would not be significantly visible from surrounding areas and their removal would not substantially alter views of the detention basin. The basin is not located in an area determined to be a scenic vista in the General Plan, the basin is not readily visible from Monterey Road due to grade changes, and deepening the basin would not alter an existing scenic vista. Therefore, the proposed project would not have an impact on scenic vistas. **(No Impact)**

Impact AES-2: The project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (No Impact)

The project site is not located within a state designated scenic highway area. Additionally, the proposed project would not impact rock outcroppings or historic buildings in the area. Therefore, the proposed project would have no impact on scenic resources in a state scenic highway area. **(No Impact)**

[4] Public views are those that are experienced from publicly accessible vantage points.

Impact AES-3:	**The project would not conflict with applicable zoning and other regulations governing scenic quality. (No Impact)**

The proposed project would not change the land use of the retention basin nor would it introduce new structures to the site and therefore, the proposed project would not conflict with existing zoning or other regulations governing scenic quality. **(No Impact)**

Impact AES-4:	**The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. (No Impact)**

The project site does not contain light sources or sources of glare and the proposed project would not modify the existing conditions by introducing a new source of light or glare. Therefore, the proposed project would have no impact. **(No Impact)**

4.2 AGRICULTURE AND FORESTRY RESOURCES

4.2.1 Environmental Setting

4.2.1.1 *Regulatory Framework*

State

Farmland Mapping and Monitoring Program

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) assesses the location, quality, and quantity of agricultural land and conversion of these lands over time. Agricultural land is rated according to soil quality and irrigation status. The best quality land is called Prime Farmland. In CEQA analyses, the FMMP classifications and published county maps are used, in part, to identify whether agricultural resources that could be affected are present on-site or in the project area.[5]

The California Land Evaluation and Site Assessment (LESA) is a point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features. The LESA Model was developed to provide lead agencies with an optional methodology to ensure that potentially significant impacts on the environment as a result of agricultural land conversions are quantitatively and consistently considered in the environmental review process (Public Resources Code Section 21095).[6]

California Land Conservation Act

The California Land Conservation Act (Williamson Act) enables local governments to enter into contracts with private landowners to restrict parcels of land to agricultural or related open space uses. In return, landowners receive lower property tax assessments. In CEQA analyses, identification of properties that are under a Williamson Act contract is used to also identify sites that may contain agricultural resources or are zoned for agricultural uses.[7]

Fire and Resource Assessment Program

The California Department of Forestry and Fire Protection (CAL FIRE) identifies forest land, timberland, and lands zoned for timberland production that can (or do) support forestry resources.[8] Programs such as CAL FIRE's Fire and Resource Assessment Program and are used to identify

[5] California Department of Conservation. "Farmland Mapping and Monitoring Program." Accessed December 21, 2020. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx.
[6] California Department of Conservation. "Land Evaluation & Site Assessment Model." Accessed December 21, 2020. http://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx.
[7] California Department of Conservation. "Williamson Act." http://www.conservation.ca.gov/dlrp/lca.
[8] Forest Land is land that can support 10 percent native tree cover and allows for management of forest resources (California Public Resources Code Section 12220(g)); Timberland is land not owned by the federal government or designated as experimental forest land that is available for, and capable of, growing trees to produce lumber and other products, including Christmas trees (California Public Resources Code Section 4526); and Timberland Production is land used for growing and harvesting timber and compatible uses (Government Code Section 51104(g)).

whether forest land, timberland, or timberland production areas that could be affected are located on or adjacent to a project site.[9]

4.2.1.2 *Existing Conditions*

The project site is identified as Open Space in the Morgan Hill General Plan and is located adjacent to land designated as grazing land.[10] The detention basin is not included in a Williamson Act contract and is not identified as Prime Farmland.

4.2.2 **Impact Discussion**

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) 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?	☐	☐	☐	☒
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
3) 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))?	☐	☐	☐	☒
4) Result in a loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
5) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

[9] California Department of Forestry and Fire Protection. "Fire and Resource Assessment Program." Accessed December 21, 2020. http://frap.fire.ca.gov/.
[10] City of Morgan Hill. 2035 General Plan. December 2017. https://www.morgan-hill.ca.gov/DocumentCenter/View/22839/MH2035-General-Plan---December-2017?bidId=.

Impact AG-1:	**The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. (No Impact)**

The proposed project site is not classified as Prime or Unique Farmland, nor is it identified as Farmland of Statewide Importance. Therefore, the proposed project would not impact Prime Farmland, Unique farmland, or Farmland of Statewide Importance. **(No Impact)**

Impact AG-2:	**The project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. (No Impact)**

The proposed project site is not zoned for agricultural use and is not under an existing Williamson Act contract. Therefore, the proposed project would not conflict with an existing agricultural zoning or Williamson Act contract. **(No Impact)**

Impact AG-3:	**The project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. (No Impact)**

The proposed project site is not zoned for forest land, timberland or Timberland Production. Therefore, the proposed project would not conflict with these zoning designations. **(No Impact)**

Impact AG-4:	**The project would not result in a loss of forest land or conversion of forest land to non-forest use. (No Impact)**

The project site is not designated as forest land. The proposed project would not convert forest land resulting in a loss of forest land. **(No Impact)**

Impact AG-5:	**The project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. (No Impact)**

The proposed project would only modify the depth and capacity of the detention basin and would not result in the conversion of surrounding Farmland to non-agricultural use or the conversion of forest land to non-forest uses. Therefore, the proposed project would not impact surrounding agricultural or forest uses. **(No Impact)**

4.3 AIR QUALITY

The information in this section is based on the Fisher Detention Basin Construction Health Risk Assessment prepared by Illingworth and Rodkin dated March 11, 2021. This report is included in Appendix A.

4.3.1 Environmental Setting

4.3.1.1 *Regulatory Framework*

Federal and State

Clean Air Act

At the federal level, the United States Environmental Protection Agency (EPA) is responsible for overseeing implementation of the Clean Air Act and its subsequent amendments. The federal Clean Air Act requires the EPA to set national ambient air quality standards for the six common criteria pollutants (discussed previously), including PM, O_3, CO, SO_x, NO_x, and lead.

CARB is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. The EPA and the CARB have adopted ambient air quality standards establishing permissible levels of these pollutants to protect public health and the climate. Violations of ambient air quality standards are based on air pollutant monitoring data and are determined for each air pollutant. Attainment status for a pollutant means that a given air district meets the standard set by the EPA and/or CARB.

Risk Reduction Plan

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, the plan involves application of emission control strategies to existing diesel vehicles and equipment to reduce DPM (in additional to other pollutants). Implementation of this plan, in conjunction with stringent federal and CARB-adopted emission limits for diesel fueled vehicles and equipment (including off-road equipment), will significantly reduce emissions of DPM and NO_X.

Regional

2017 Clean Air Plan

The Bay Area Air Quality Management District (BAAQMD) is the agency primarily responsible for assuring that the federal and state ambient air quality standards are maintained in the San Francisco Bay Area. Regional air quality management districts, such as BAAQMD, must prepare air quality plans specifying how state and federal air quality standards will be met. BAAQMD's most recently adopted plan is the Bay Area 2017 Clean Air Plan (2017 CAP). The 2017 CAP focuses on two related BAAQMD goals: protecting public health and protecting the climate. To protect public health, the 2017 CAP describes how BAAQMD will continue its progress toward attaining state and

federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 CAP includes control measures designed to reduce emissions of methane and other super-greenhouse gases (GHGs) that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.[11]

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. Jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing air quality impacts developed by BAAQMD within their CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

Local

Morgan Hill 2035 General Plan

Adopted July 27, 2016, the Morgan Hill 2035 General Plan includes goals, policies, and actions to improve air quality issues facing the City of Morgan Hill. The following goals, policies, and actions are applicable to the proposed project:

Goal NRE-10: Reduced air pollution emissions.

Policy NRE-10.2 State and Federal Regulation. Encourage effective regulation of mobile and stationary sources of air pollution and support State and federal regulations to improve automobile emission controls.

Goal NRE-11: Minimized exposure of people to toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Policy NRE-11.3 Health Risk Assessments. For proposed development that emits toxic air contaminants, require project proponents to prepare health risk assessments in accordance with Bay Area Air Quality Management District procedures as part of environmental review and implement effective mitigation measures to reduce potential health risks to less-than-significant levels.

Alternatively, require these projects to be located an adequate distance from residences and other sensitive receptors to avoid health risks. Consult with the Bay Area Air Quality Management District to identify stationary and mobile toxic air contaminant sources and determine the need for and requirements of a health risk assessment for proposed developments

Policy NRE-11.4 Truck Routes. For development projects generating significant heavy-duty truck traffic, designate truck routes that minimize exposure of sensitive receptors to toxic air contaminants and particulate matter.

[11] BAAQMD. *Final 2017 Clean Air Plan.* April 19, 2017. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans.

Policy NRE-11.5 Truck Idling. For development projects generating significant truck traffic, require signage to remind drivers that the State truck idling law limits truck idling to five (5) minutes.

Policy NRE-11.6 Vegetation Buffers. Encourage the use of pollution-absorbing trees and vegetation in buffer areas between substantial sources of toxic air contaminants and sensitive receptors.

Goal NRE-12: Minimized air pollutant emissions from demolition and construction activities

Policy NRE-12.1: Best Practices. Requirement that development projects implement best management practices to reduce air pollutant emissions associated with construction and operation of the project.

Policy NRE-12.2 Conditions of Approvals. Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At a minimum, conditions shall conform to construction mitigation measures recommended in the current Bay Area Air Quality Management District CEQA Guidelines.

Policy NRE-12.3 Control Measures. Require construction and demolition projects that have the potential to disturb asbestos (from soil or building material) to comply with all the requirements of the California Air Resource Board's air toxics control measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.

Policy NRE-12.4 Grading. Require subdivision designs and site planning to minimize grading and use landform grading in hillside areas.

- **Action NRE-12.A Standard Measures for Demolition and Grading.** Adopt and periodically update dust, particulate matter, and exhaust control standard measures for demolition, grading, and construction activities to include on project plans mitigation measures as conditions of approval based Bay Area Air Quality Management District CEQA Guidelines. Include measures to prevent silt loading on roadways that generates particulate matter air pollution by prohibiting unpaved or unprotected access to public roadways from construction sites.

- **Action NRE-12.B Grading Ordinance.** Revise the grading ordinance and condition grading permits to require that graded areas be stabilized from the completion of grading to commencement and construction.

4.3.1.2 *Existing Conditions*

The project site is a detention basin for stormwater and does not currently contribute substantial emissions to the surrounding area. Limited vehicle visits to the detention basin may be conducted for maintenance but this results in negligible emissions created by the site. The nearest sensitive receptors to the project site are located in the residential buildings located 300 feet to the west across Old Monterey Road.

4.3.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
3) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Note: Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the determinations.

Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan. (Less than Significant Impact)

Construction Emissions

The proposed project would require excavation on site and hauling of the materials off site with approximately 8,400 truck trips, with approximately 336 truck trips a day (over the course of 25 days). The predicted emissions created during construction of the proposed project over approximately five weeks are presented in Table 4.3-1 below.

Table 4.3-1 Construction Period Emissions

Year	ROG	NOx	PM10 Exhaust	PM2.5 Exhaust
Construction Emissions Per Year (Tons)				
Project construction and hauling in 2021	0.04	0.47	0.02	0.01
Annualized Daily Construction Emissions (pounds/day)				
Average daily emissions	0.31	3.65	0.13	0.11
BAAQMD Thresholds (pounds per day)	54 lbs./day	54 lbs./day	82 lbs./day	54 lbs./day
Exceed Threshold?	No	No	No	No

Source: Illingworth and Rodkin, Inc. *Fisher Detention Basin Construction Health Risk Assessment*. March 11, 2021

The construction of the proposed project would not exceed the BAAQMD significance thresholds for daily construction emissions and would be consistent with the 2017 Clean Air Plan. **(Less than Significant Impact)**

Operations

The proposed project would operate in the same manner as the existing detention basin and would not generate emissions of air quality pollutants. Therefore, the proposed project would have no impacts during operations. **(Less than Significant Impact)**

Impact AIR-2:	**The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. (Less than Significant Impact)**

As noted above in Impact AIR-1, project construction and operational emissions would be below established BAAQMD thresholds of significance used to determine whether a project would result in a cumulatively considerable contribution of any criteria pollutant for which the region is in non-attainment. Therefore, the construction and operations of the proposed project would result in less than significant net increase of criteria pollutants for the region under applicable federal and state ambient air quality standard. **(Less than Significant Impact)**

Impact AIR-3:	**The project would not expose sensitive receptors to substantial pollutant concentrations. (Less than Significant Impact with Mitigation Incorporated)**

Construction activities, particularly during site preparation and grading, would generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Vehicles leaving the site would deposit mud on local streets, which would be an additional source of airborne dust after it dries.

Additionally, construction equipment and heavy-duty truck traffic generates diesel exhaust which expose sensitive receptors to toxic air contaminants (TACs) and $PM_{2.5}$. Residential sensitive receptors along the truck haul routes were considered for impacts from construction emissions in addition to the residential uses to the south and west of the project site. The impacts to sensitive receptors from the proposed project are summarized in Table 4.3-2 below. The Maximumly Exposed Individual (MEI) for the proposed project, which is the sensitive receptor identified with the maximum increased cancer risk, is located approximately 900 feet southeast of the project in the residential development.

Table 4.3-2 Project Community Risk Impacts			
Source	**Cancer Risk at MEI (per million)**	**Maximum Annual**	
		$PM_{2.5}$ (ug/m3)	**Hazard Index**
Project Construction (year 2021)	0.60	0.01	<0.01
Truck Trips Haul Route 1 (year 2021)	0.09	<0.01	<0.01
Truck Trips Haul Route 2 (year 2021)	0.10	<0.01	<0.01
Total	0.79	0.01	<0.01
BAAQMD Single-Source Threshold	**>10.0**	**>0.3**	**>1.0**
Exceed Threshold?	No	No	No

Source: Illingworth and Rodkin. Fisher Detention Basin Construction Health Risk Assessment.

Notes: The hauling routes were split into entry and exit paths for the site. Haul Route 1 was determined to only be an exit route for the site and Haul Route 2 would accommodate entry and exit routes. Based on this information the trips were split amongst the two routes.

The proposed project would result in an impact through the generation of dust and other particulate matter during construction.

Impact AIR-1: The proposed project would result in fugitive dust impacts in the form of $PM_{2.5}$ and PM_{10} during construction of the project. **(Significant Impact)**

Mitigation Measures

MM-AIR-1 During any construction period ground disturbance, the City shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. 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.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of

Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Project contributions to overall community risk impacts are below the single-source thresholds. Few cumulative sources, besides the project, are near the project and sensitive receptors. According to BAAQMD, a project will only have a cumulative considerable contribution if the project exceeds the single source threshold. The project is located near the Monterey Road and railroad tracks which contribute to air quality impacts in the surrounding areas. Although the proposed project would contribute to existing emissions, the project impacts are minimal to the point where they would not represent a contribution to a cumulative impact. Therefore, nearby sources within 1,000 feet of the project site, in addition to project construction, would not cause community risk levels to exceed the cumulative thresholds.

Therefore, with the implementation of MM-AIR-1, the proposed project would not result in significant pollutant concentrations which would impact sensitive receptors in the area and the proposed project would result in a less than significant impact. **(Less than Significant Impact with Mitigation Incorporated)**

Impact AIR-4:	**The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less than Significant Impact)**

The proposed project would not result in any odors or other emissions during the construction or operation of the detention basin. Therefore, the proposed project would not result in other emission impacts adversely affecting a substantial number of people. **(Less than Significant Impact)**

4.4 BIOLOGICAL RESOURCES

The information in this section is based on the Arborists Report prepared by Live Oak Associates Inc. on March 9, 2021, and the Fisher Creek Biological Resources Report prepared by H.T. Harvey and Associates dated May 25, 2021. The full reports are included in Appendix B and Appendix C, respectively.

4.4.1 Environmental Setting

4.4.1.1 *Regulatory Framework*

Federal and State

Endangered Species Act

Individual plant and animal species listed as rare, threatened, or endangered under state and federal Endangered Species Acts are considered special-status species. Federal and state endangered species legislation has provided the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Permits may be required from both the USFWS and CDFW if activities associated with a proposed project would result in the take of a species listed as threatened or endangered. To "take" a listed species, as defined by the State of California, is "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" these species. Take is more broadly defined by the federal Endangered Species Act to include harm of a listed species.

In addition to species listed under state and federal Endangered Species Acts, Sections 15380(b) and (c) of the CEQA Guidelines provide that all potential rare or sensitive species, or habitats capable of supporting rare species, must be considered as part of the environmental review process. These may include plant species listed by the California Native Plant Society and CDFW-listed Species of Special Concern.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits killing, capture, possession, or trade of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. Hunting and poaching are also prohibited. The taking and killing of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not to take birds.[12] Nesting birds are considered special-status species and are protected by the USFWS. The CDFW also protects migratory and nesting birds under California Fish and Game Code Sections 3503, 3503.5, and 3800. The CDFW defines taking as causing abandonment and/or loss of reproductive efforts through disturbance.

[12] United States Department of the Interior. "Memorandum M-37050. The Migratory Bird Treaty Act Does Not Prohibit Incidental Take." Accessed December 21, 2020. https://www.doi.gov/sites/doi.gov/files/uploads/m-37050.pdf.

Sensitive Habitat Regulations

Wetland and riparian habitats are considered sensitive habitats under CEQA. They are also afforded protection under applicable federal, state, and local regulations, and are generally subject to regulation by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), CDFW, and/or the USFWS under provisions of the federal Clean Water Act (e.g., Sections 303, 304, 404) and State of California Porter-Cologne Water Quality Control Act.

Fish and Game Code Section 1602

Streambeds and banks, as well as associated riparian habitat, are regulated by the CDFW per Section 1602 of the Fish and Game Code. Work within the bed or banks of a stream or the adjacent riparian habitat requires a Streambed Alteration Agreement from the CDFW.

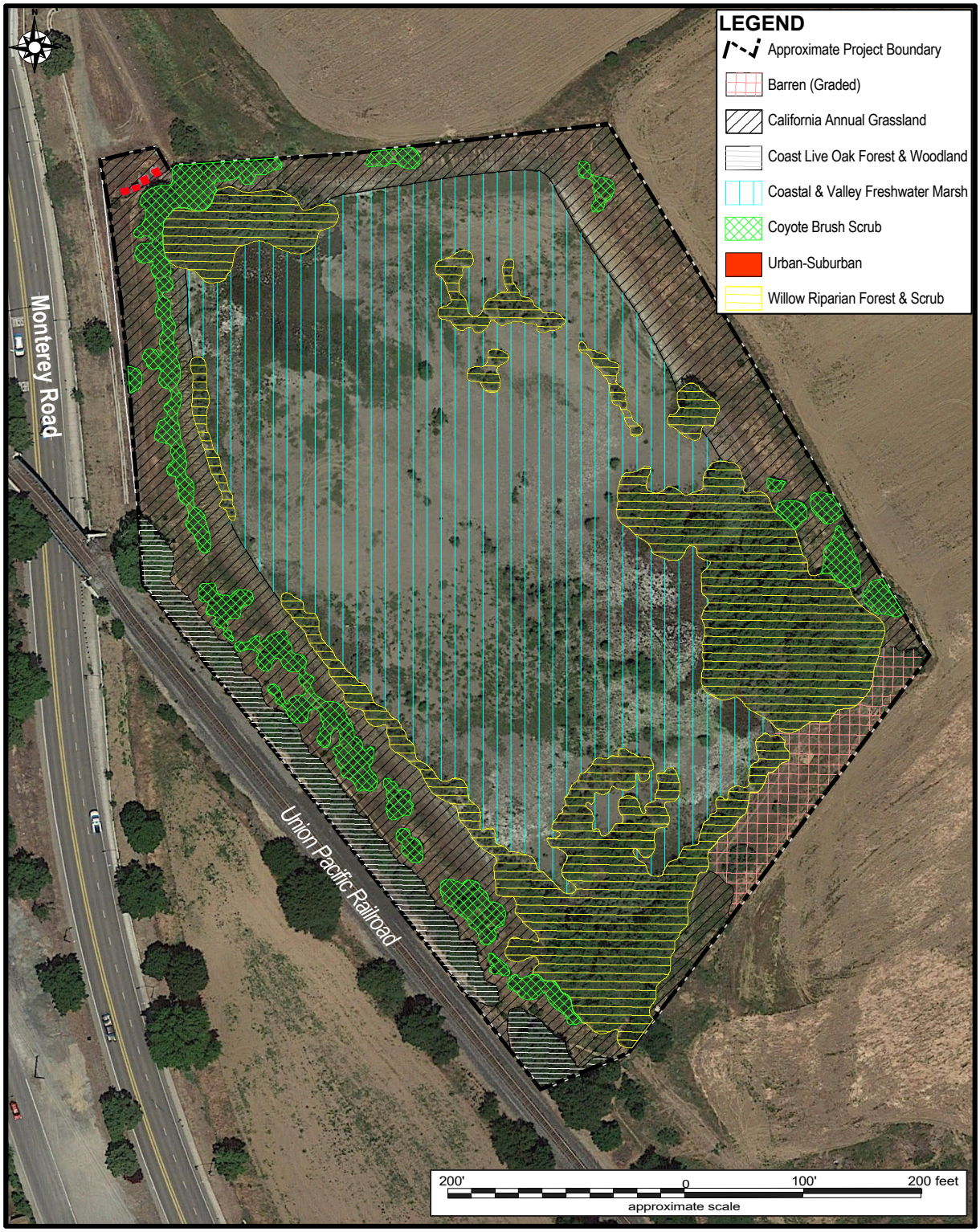
Regional and Local

Santa Clara Valley Habitat Plan/Natural Community Conservation Plan

The Santa Clara Valley Habitat Plan/Natural Community Conservation Plan (Habitat Plan) covers approximately 520,000 acres, or approximately 62 percent of Santa Clara County. It was developed and adopted through a partnership between Santa Clara County, the Cities of San José, Morgan Hill, and Gilroy, Santa Clara Valley Water District (Valley Water), Santa Clara Valley Transportation Authority (VTA), USFWS, and CDFW. The Habitat Plan is intended to promote the recovery of endangered species and enhance ecological diversity and function, while accommodating planned growth in southern Santa Clara County. The Santa Clara Valley Habitat Agency is responsible for implementing the plan.

4.4.1.2 *Existing Conditions*

The project site is occupied by a 7.5 acre,13-foot deep detention basin that contains water during storm events. The bottom of the detention basin is primarily identified as valley freshwater marsh and willow riparian forest/scrub. The upland areas of the basin are mostly California annual grassland with some areas of northern coastal scrub/Diablan sage scrub, and Coast Live Oak woodland. Habitats on the project site can be seen in Figure 4.4-1.



Source: Live Oak Associates, Inc., October 20, 2020.

LAND COVER ON PROJECT SITE | FIGURE 4.4-1

Special Status Species

Four special-status bird species, the tricolored blackbird (*Agelaius tricolor*), loggerhead shrike (*Lanius ludovicianus*), grasshopper sparrow (*Ammodramus savannarum*), and American peregrine falcon (*Falcon peregrinus anatum*) can occasionally occur within the project site as nonbreeding foragers (i.e., they do not nest within the project site).

The pallid bat (*Antrozous pallidus*), a California species of special concern, may also forage aerially over habitats within the project site. These species are not expected to nest, roost, or breed in or immediately adjacent to the project site.

The yellow warbler (*Setophaga petechia*), white-tailed kite (*Elanus leucurus*), and monarch butterfly (*Danaus plexippus*) could potentially breed in very low numbers within or immediately adjacent to the project site.

Sensitive Natural Communities and Habitats

The natural communities on site are considered to be secure and are not at risk of endangerment at a state or global scale. The areas at and below the top of the bank are considered to be riparian habitat under CDFW jurisdiction and this habitat extends to the outer edges of riparian tree canopies surrounding the basin.

Based on the vegetation, soils, and hydrology of the basin, the area at the base of the basin supports wetland vegetation and would likely be considered jurisdictional under the Clean Water Act. Additionally, the RWQCB would likely also consider the riparian vegetation located below the top of the bank of the basin (i.e., willow riparian forest and scrub land cover type) to be important buffers to Waters of the State associated with the basin.

On-site Trees

The primary resources located on the project site are the 91 trees, including 88 indigenous trees and three non-indigenous trees. A summary of the ordinance-sized, indigenous tree species on site include; 46 red willows (*Salix laevigata*), 33 Fremont's cottonwood, five coast live oaks (*Quercus agrifoli*a); three Goodding's black willow (*Salix gooddingii*); and one valley oak (*Quercus lobata*). The non-indigenous trees on site include two potentially ordinance-sized evergreen ash (*Fraxinus uhdei*) and a Brazilian pepper (*Schinus terebinthifolia*), and one non-ordinance sized plane tree (*Platanus occidentalis*).

Hydrologic Connectivity

Three inlets direct storm flows into the basin including two inlets in the easternmost corner and a third inlet in the southernmost corner. All storm drains are fed by sheet flow from adjacent upland areas. The only outlet for water in the basin is via a pump in the northwesternmost corner, which leads to headwaters for Fisher Creek. This pump is up high on the bank, and is intended to be used when the basin fills during large or successive storm events. The pump leads to a pipe which outfalls into Fisher Creek near the intersection of Jarvis Drive and Monterey Road. Because the basin was constructed in an upland area, it is not considered a part of Fisher Creek.

4.4.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?	☐	☒	☐	☐
3) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
4) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Impact BIO-1: The project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. (Less than Significant Impact with Mitigation Incorporated)

The proposed project would require the removal of multiple trees on site and would also require work adjacent to multiple trees remaining on-site. The disturbance of trees on the project site would potentially disturb birds using these trees as nesting or foraging habitat, including the tri-colored blackbird, which is part of a survey area that the site occupies. The site would also provide habitat or

breeding area for multiple species which may be present in the area based on the land cover types within the basin area. Therefore, the deepening of the basin and other disturbance on the project site would impact sensitive or special status species identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Regionally Common Land Cover Types and Common Plant and Wildlife Species

The proposed project would result in 0.12 acres of temporary impacts California annual grassland and 0.02 acres of permanent impacts to northern coastal scrub/Diablan sage scrub. These impacts can be seen in Figure 4.4-2. The location of this habitat on site is on the engineered banks of the existing basin and this does not provide regionally rare or especially high-value habitat. California annual grassland and northern coastal scrub/Diablan sage scrub are abundant and widespread regionally, are not considered sensitive by the Habitat Plan and are not particularly valuable from the perspective of providing important plant or wildlife habitat. Therefore, impacts on these habitats would result in a less than significant impact on habitat for native vegetation or wildlife, or special-status species. **(Less than Significant Impact)**

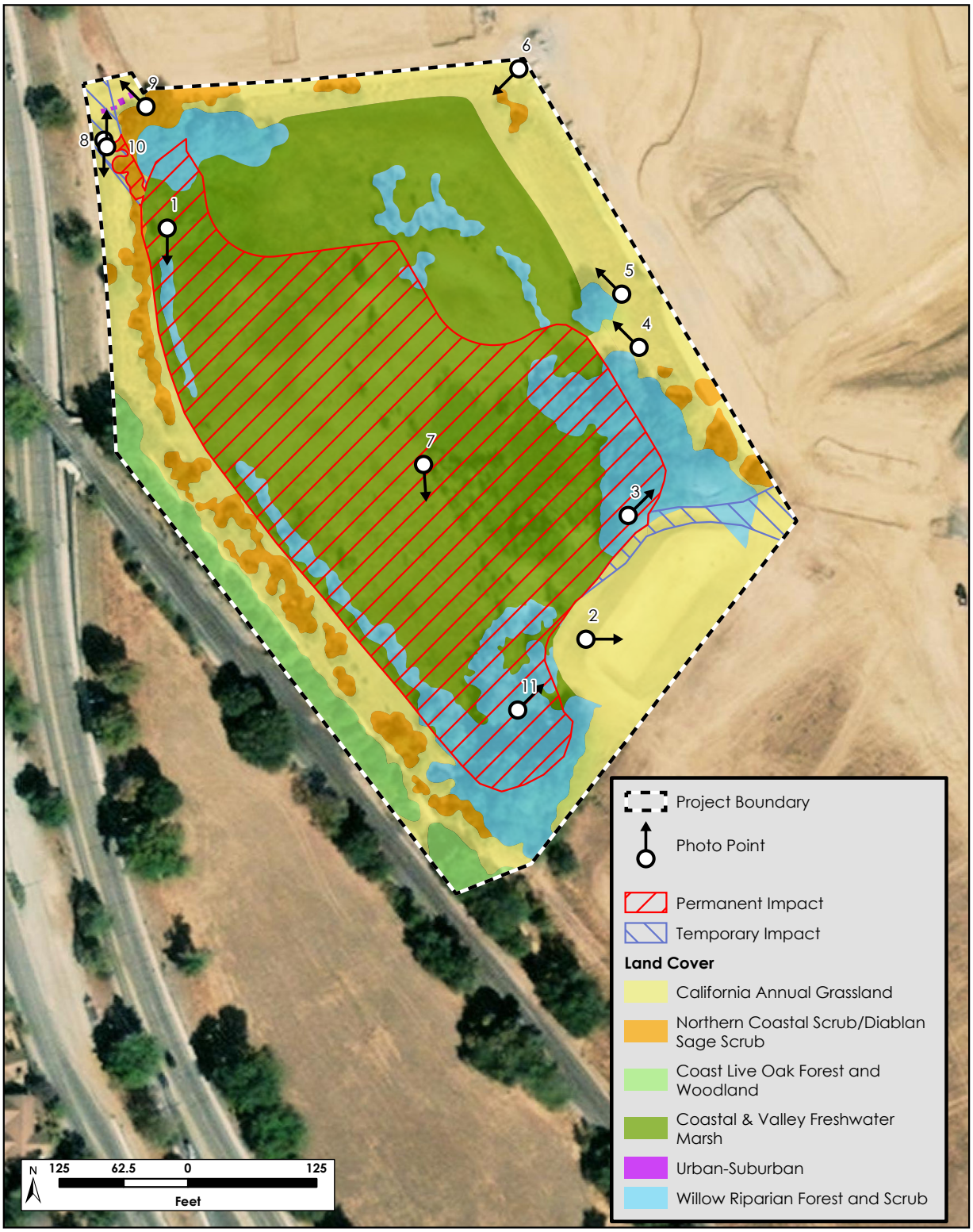
Nonbreeding Special-Status Birds and Mammals

Additionally, the project site is known to contain tricolored blackbird, the loggerhead shrike, the grasshopper sparrow, the American peregrine falcon, and the pallid bat as nonbreeding migrants, transients, or foragers. Activities under the proposed project would have potential to impact foraging habitats and individuals of these species through the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during maintenance activities) but would not result in the loss of individuals, as individuals of these species would move away from any construction areas or equipment before they could be injured or killed. Further, the habitats within the project site do not provide important foraging habitat used regularly by large numbers of individuals of any of these species. Therefore, impacts of the proposed project would not substantially impact on these species' foraging habitat or regional populations of these species and would result in a less than significant impact. **(Less than Significant Impact)**

Yellow Warbler and White-Tailed Kite

The yellow warbler (a California species of special concern) and white-tailed kite (a state fully protected species) could potentially nest in riparian habitat within and immediately adjacent to the project site around the detention basin. Yellow warbler's may forage in this habitat during migration and winter, and white tailed kites may forage in surrounding grasslands year-round. According to site observations performed as part of the biological assessment, it is likely that no more than two pairs of yellow warblers and one pair of white-tailed kites could potentially nest within or immediately adjacent to the project site.

The project would result in the temporary and permanent loss of suitable nesting and foraging habitat for these species through the temporary and permanent removal of trees and upland areas. In addition, activities that occur during the nesting season would cause a substantial increase in noise or human activity near active nests of yellow warblers or white-tailed kites resulting in the abandonment of active nests (i.e., nests with eggs or young). Additionally, heavy ground disturbance, noise, and vibrations created by project activities could also potentially disturb nesting and foraging individuals and cause them to move away from the project site.



Source: H.T. Harvey & Associates, May 2021.

HABITAT IMPACTS

FIGURE 4.4-2

The number of individuals from each species that would be affected by activities at the project site would be limited to only one or two nesting pairs. Therefore, the construction would not impact a substantial number of species and the disturbance of habitat would not create substantial impact to activities on site. To prevent the potential for impacts, the proposed project would be required to comply with standard conditions included in the Habitat Plan as seen below.

Impact BIO-1: Construction activities on the project site could result in the loss of raptor and/or migratory bird eggs or nestlings, either directly by destroying an active nest or indirectly by disturbing and causing the abandonment of an active nest. **(Significant Impact)**

Mitigation Measures: The following mitigation measures will ensure impacts to nesting birds are reduced to a less than significant level.

MM-BIO-1.1: Construction shall be scheduled to avoid the nesting season to the extent feasible. If construction can be scheduled to occur between September 1st and January 31st (inclusive) to avoid the raptor nesting season, no impacts will be expected. If construction will take place between February 1st and August 31st, then preconstruction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. Surveys shall be completed within 30 days of the on-set of site clearing or construction activities. During this survey, the ornithologist shall inspect all trees and other potential nesting habitats (e.g., trees, shrubs, buildings) onsite trees as well as all trees within 250 feet of the site for nests.

MM-BIO-1.2: If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist shall determine the extent of a disturbance-free buffer zone to be established around the nest (typically 250 feet for raptors and 50-100 feet for other species) that shall remain off limits to construction until the nesting season is over, to ensure that no nests of species protected by the Migratory Bird Treaty Act and California Fish and Wildlife Code will be disturbed during project implementation. A report indicating the result of the survey and any designated buffer zones shall be submitted to the satisfaction of the City Engineer prior to issuance of a grading permit.

Through compliance with the standard conditions of the Habitat Plan the proposed project would have a less than significant impact on the yellow warbler and white-tailed kite. **(Less than Significant Impact with Mitigation Incorporated)**

Monarch Butterfly

Construction of the proposed project would result in minimal temporary impacts monarch butterflies within the project site. However, the site is only occasional used for food or breeding, and the proposed project will not prevent the presence of suitable nectar sources or habitat for milkweed. The site would therefore continue to provide resources for the monarch butterfly following project activities. In addition, the site supports a small proportion of regionally available nectar sources and

milkweed plants, therefore, the temporary or permanent impacts to habitat on the site will not have substantial impacts habitat for monarchs.

There is a possibility for project activities to impact eggs or larvae of this species in the event that they are breeding on the site, however, any such impact would represent a small proportion of regional populations and therefore would not have a significant impact on them. The proposed project would also be required to pay Habitat Plan impact fees to offset any potential impacts which may occur as a part of the project. Therefore, the impacts to monarch butterflies on the project site would be less than significant. **(Less than Significant Impact)**

Impact BIO-2:	**The project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS. (Less than Significant Impact with Mitigation Incorporated)**

The proposed project would require disturbance of ground surfaces primarily at the bottom of the detention basin and along the toe of the slope on the edge of the basin. Willow riparian forest and scrub is the primary habitat type in this location and the proposed project would result in approximately 0.74 acres of vegetation removal within this area. Additionally, the proposed project would require temporary modification of 0.02 acres this habitat on the corners of the site, via tree trimming, removal of ground cover, and minor tree removal, to allow for construction access.

The proposed project would be required to comply with Condition 3 included in the Habitat Plan to reduce impacts to this habitat area.

Impact BIO-2: The proposed project would disturb willow riparian forest and would require fee payment and avoidance and minimization measures to reduce impacts. **(Significant Impact)**

<u>Mitigation Measures:</u> The following mitigation measures will ensure impacts to riparian are reduced to a less than significant level.

MM-BIO-2.1: The proposed project would be required to comply with Habitat Plan Condition 3 which applies to all projects and identifies a set of programmatic BMPs, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality, including during project construction. These requirements include preconstruction, construction site, and post-construction actions.

Preconstruction conditions are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction.

Post-construction conditions include measures for stormwater treatment and flow control.

MM-BIO-2.2: The project will pay VHP impact fees for impacts of the project on natural habitats, including riparian impact fees. Those fees will contribute to the VHP's conservation program, which includes restoration, enhancement, and management of riparian habitats, thus compensating for impacts of VHP covered projects on riparian habitats. The Santa Clara Valley Habitat Agency uses these fees to fund the acquisition and restoration of similar riparian habitats within the Plan area, thus compensating for the small loss of riparian habitat.

Therefore, through compliance with the standard conditions identified in the Habitat Plan the proposed project would have a less than significant impact on riparian or other sensitive habitats on the project site. **(Less than Significant Impact with Mitigation Incorporated)**

Impact BIO-3:	**The project would not have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. (Less than Significant Impact with Mitigation Incorporated)**

The proposed project would disturb approximately 2.82 acres of coastal and valley freshwater marsh wetland area during soil excavation for the construction period. The degree to which wetland vegetation re-establishes would be a based on the expected duration of seasonal inundation following the grading and whether that will result in open water habitat persisting and replacing the current wetland vegetation. Because the replacement is currently unknown at this time, the removal of the wetland vegetation for excavation purposes is considered a permanent impact on wetland areas. The proposed project would implement Condition 3 and Condition 12required by the Habitat Plan to reduce the impacts to wetland areas.

Impact BIO-3: The proposed project would disturb coastal and valley freshwater marsh wetland and would require fee payment and avoidance and minimization measures to reduce impacts. **(Significant Impact)**

Mitigation Measures: The following mitigation measures will ensure impacts to state or federally protected wetlands are reduced to a less than significant level.

MM-BIO-3.1: The proposed project would be required to comply with Habitat Plan Condition 3 which applies to all projects and identifies a set of programmatic BMPs, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality, including during project construction. These requirements include preconstruction, construction site, and post-construction actions.

Preconstruction conditions are site design planning approaches that protect

water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for stormwater treatment and flow control.

MM-BIO-3.2: The project will pay VHP impact fees for impacts of the project on natural habitats, including wetland impact fees, in accordance with Condition 12. These fees will contribute to the VHP's conservation program, which includes restoration, enhancement, and management of wetland habitats, thus compensating for impacts of VHP-covered projects on such habitats. The Santa Clara Valley Habitat Agency uses these fees to fund the restoration of similar wetland habitats within the Plan area, thus compensating for these impacts.

Therefore, through compliance with the standard conditions and payment of Habitat Plan fees the impacts to wetland habitat would be minimized to the greatest extent possible and impacted areas would be restored or enhanced in commensurate areas near the project site, and the proposed project would have a less than significant impact on wetland areas. **(Less than Significant Impact with Mitigation Incorporated)**

Impact BIO-4:	**The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Less than Significant Impact)**

The project site provides area for animals to breed, but the site does not contain important wildlife nursery areas which would be impacted by activity on the project site.

In the proposed project region, natural habitats are important for movement as long as no barriers to connectivity exist. However, the habitats comprising the project site are separated from natural lands (e.g., in the hills on either side of Coyote Valley, or along Fisher Creek or Coyote Creek) by extensive urban development, which limits the potential for the site to support regional wildlife movement.

The proposed project would temporarily create noise and disturbance which would cause species that commonly utilize habitat in the project site to avoid normal dispersal pathways temporarily. This temporary discouragement would only occur for the duration of construction over five weeks, therefore, the impact to migratory species would be low and the project site would return to pre-project conditions after this period.

The removal of vegetation at the base of the basin would also result in a more permanent limitation of movement for species on the project site. This limitation would only marginally decrease the value

of the detention basin for wildlife movement; however, the proposed project would pay Habitat Plan impact fees to limit impacts on migratory pathways through the site. Therefore, the proposed project would have a less than significant impact on the movement of any native resident or migratory fish or wildlife species, would not significantly impact established native resident or migratory wildlife corridors, and would not impede the use of native wildlife nursery sites. **(Less than Significant Impact)**

Impact BIO-5:	**The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant Impact with Mitigation Incorporated)**

The proposed project would result in the removal of 56 trees on site, including 37 red willows and 19 Fremont cottonwoods. In addition, construction activities would be conducted in close proximity to multiple other trees on-site. The removal and potential for damage to trees retained on site would require the proposed project to comply with the standard tree protection and replacement measures identified by the City of Morgan Hill.

Impact BIO-5: The removal, cutting down, poisoning, or other destruction of protected trees, including pruning that would reduce the canopy area by more than 25 percent of any Ordinance sized tree, would require permits or mitigation measures under the City Municipal Code (Chapter 12.32). **(Significant Impact)**

Mitigation Measures: The following mitigation measures will ensure impacts to ordinance sized trees are reduced to a less than significant level.

MM BIO-5.1: To the extent feasible, activities shall avoid impacts to any protected trees. Avoidance is considered to be completely avoiding any work or staging under the dripline of trees. The boundary of the designated avoidance buffer shall be flagged or fenced prior to initial ground disturbance. If complete avoidance is not feasible, BIO MM-5.2 shall be implemented.

MM BIO-5.2: The City shall comply with local ordinances and submit permit applications for removal, trimming, damage, or relocation of all trees covered by the City ordinance. Any trees to be removed shall require replacement at a two to-one ratio on a comparable ratio of size. The replacement trees shall be planted on site to the extent feasible and the project proponent shall comply with all other replacement requirements imposed by the City.

In accordance with Municipal Code Section 12.32.080, the City would replace these trees with plantings of trees in compliance with landscaping requirements in Chapter 18.74 of the municipal code. Since the project is required to comply with the City's Municipal Code Chapter 12.32 for tree removal and replacement, the project would not result in a significant impact due to the loss of trees. Therefore, incorporation of the above conditions to ensure compliance with the City of Morgan Hill tree ordinance, any potential impacts related to conflict with local policies or ordinances protecting trees would be less than significant. **(Less than Significant Impact with Mitigation Incorporated)**

Impact BIO-6:	**The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (Less than Significant Impact)**

The City of Morgan Hill is a signatory to the Habitat Plan, which is a Habitat Conservation Plan and Natural Community Conservation Plan. As described in above, the proposed project is considered a "covered project" under the Habitat Plan. Species covered under the Habitat Plan are not expected to be significantly impacted by the proposed project as discussed in the impact discussion above. Similarly, impacts on sensitive habitats, such as stream and riparian habitats for which the Habitat Plan requires specific impact fees, are discussed above. The project will apply for Habitat Plan coverage and will adhere to all applicable Habitat Plan Conditions during project implementation. Therefore, the proposed project would not conflict with the Habitat Plan.

The proposed project would not conflict with any other adopted habitat conservation plans or natural community conservation plans, or with any other approved local, regional, or state habitat conservation plans or natural community conservation plans. Therefore, impacts associated with conflicts between the proposed project and any adopted habitat conservation plan or natural community conservation plan are less than significant. **(Less than Significant Impact)**

4.5 CULTURAL RESOURCES

4.5.1 Environmental Setting

4.5.1.1 *Regulatory Framework*

Federal and State

National Historic Preservation Act

Federal protection is legislated by the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resource Protection Act of 1979. These laws maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP). Section 106 of the NHPA and related regulations (36 Code of Federal Regulations [CFR] Part 800) constitute the primary federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed or eligible for listing in the NRHP. Impacts to properties listed in the NRHP must be evaluated under CEQA.

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is administered by the State Office of Historic Preservation and encourages protection of resources of architectural, historical, archeological, and cultural significance. The CRHR identifies historic resources for state and local planning purposes and affords protections under CEQA. Under Public Resources Code Section 5024.1(c), a resource may be eligible for listing in the CRHR if it meets any of the NRHP criteria.[13]

Historical resources eligible for listing in the CRHR must meet the significance criteria described previously and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if it maintains the potential to yield significant scientific or historical information or specific data.

The concept of integrity is essential to identifying the important physical characteristics of historical resources and, therefore, in evaluating adverse changes to them. Integrity is defined as “the authenticity of a historical resource’s physical identity evidenced by the survival of characteristics that existed during the resource's period of significance.” The processes of determining integrity are similar for both the CRHR and NRHP and use the same seven variables or aspects to define integrity that are used to evaluate a resource's eligibility for listing. These seven characteristics include 1) location, 2) design, 3) setting, 4) materials, 5) workmanship, 6) feeling, and 7) association.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both state and private lands. The act requires that upon discovery of human remains, construction or excavation activity must cease and the county coroner be notified.

[13] California Office of Historic Preservation. “CEQA Guidelines Section 15064.5(a)(3) and California Office of Historic Preservation Technical Assistance Series #6.” Accessed August 31, 2020. http://www.ohp.parks.ca.gov/pages/1069/files/technical%20assistance%20bulletin%206%202011%20update.pdf.

Public Resources Code Sections 5097 and 5097.98

Section 15064.5 of the CEQA Guidelines specifies procedures to be used in the event of an unexpected discovery of Native American human remains on non-federal land. These procedures are outlined in Public Resources Code Sections 5097 and 5097.98. These codes protect such remains from disturbance, vandalism, and inadvertent destruction, establish procedures to be implemented if Native American skeletal remains are discovered during construction of a project, and establish the Native American Heritage Commission (NAHC) as the authority to resolve disputes regarding disposition of such remains.

Pursuant to Public Resources Code Section 5097.98, in the event of human remains discovery, no further disturbance is allowed until the county coroner has made the necessary findings regarding the origin and disposition of the remains. If the remains are of a Native American, the county coroner must notify the NAHC. The NAHC then notifies those persons most likely to be related to the Native American remains. The code section also stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.

4.5.1.2 *Existing Conditions*

The existing site has been excavated to 13 feet below the ground surface to construct the existing detention basin.

Archeological Setting

There have been several noteworthy studies of the archaeological resources in Morgan Hill. Within this body of research, cultural, temporal, and spatial units were separated from each other and assigned them to six chronological periods: Paleo-Indian (10000 to 6000 B.C.), Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500), and Emergent (Upper and Lower, A.D. 500 to 1800). According to a report by Circa: Historic Property Development, the first inhabitants to the Morgan Hill area arrived approximately 10,000 years ago, shortly after the Ice Age. Tribes in the area were hunter gatherers and relied on local terrestrial and marine flora and fauna.

Waterfowl were captured by local tribes in nets using decoys to attract them. Native peoples constructed watercraft from tule reeds and possessed bow and arrow technology, fashioned blankets from sea otter pelts, and fabricated basketry from twined reeds of various types. They also assembled a variety of stone and bone tools in their assemblages. Buried remnants of this lifestyle would constitute archeological resources.

Archaeological surveys conducted in Morgan Hill have identified numerous prehistoric sites with shell midden components, including human burials. This finding indicates there is potential for additional undiscovered archeological resources in the City.

Historical Setting

The project site does not contain structures however the project is adjacent to the Monterey Road UPRR Train Trestle, also known as the Madrone Underpass, which is listed on local historic registers.

4.5.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?	☐	☐	☐	☒
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	☐	☐	☒	☐
3) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Impact CUL-1: The project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. (No Impact)

The proposed project would involve the excavation of the existing detention basin. The existing site does not contain historic structures, however it is located near the Monterey Road UPRR Train Trestle which is a listed historic structure, on state or local historic registers. The bridge is currently in operation and is structurally stable with train traffic occurring frequently on the bridge. The bridge is adjacent to the site, however, it will not receive substantial vibratory impacts from construction and would not represent an impact on historic resources. Therefore, the proposed project would result in a less than significant impact on a historical resource pursuant to CEQA Guidelines Section 15064.5. **(No Impact)**

Impact CUL-2: The project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5. (Less than Significant Impact)

The proposed project would excavate the bottom of the existing detention basin to increase the depth by approximately 10 feet. Due to the presence of cultural resources in the City of Morgan Hill, during excavation there is a chance that unknown archaeological resources may be uncovered, including human remains. In the event that the proposed project encounters archeological resources, the proposed project will incorporate the following Standard Conditions of Approval.

Standard Condition CUL-1 (Unintentional Discovery of Resources): In the event of the unintentional discovery of undocumented human remains or significant historic or archaeological materials during construction, the following policies and procedures for treatment and disposition measures shall be implemented:

- If human remains are encountered, they shall be treated with dignity and respect as due to them. Information about such a discovery shall be held in confidence by all project personnel

on a need to know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.

  - Remains shall not be held by human hands. Surgical gloves shall be worn if remains need to be handled.
  - Surgical mask shall also be worn to prevent exposure to pathogens that may be associated with the remains.

- In the event that known or suspected Native American remains are encountered, or significant historic or archaeological materials are discovered, ground-disturbing activities shall be immediately stopped.27 Ground-disturbing project activities may continue in other areas that are outside the discovery location.
- An "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the Contractor Foreman or authorized representative, or party who made the discovery, or if onsite at the time or discovery, by the Monitoring Archaeologist (typically 25 to 50 foot buffer for a single burial or archaeological find).
- The discovery location shall be secured as directed by the City if considered prudent to avoid further disturbances.
- The Contractor Foreman or authorized representative, or party who made the discovery shall be responsible for immediately contacting by telephone the parties listed below to report the find and initiate the consultation process for treatment and disposition:
  - The City of Morgan Hill Development Services Director
  - The Contractor's Point(s) of Contact
  - The Coroner of the County of Santa Clara (if human remains found)
  - The Native American Heritage Commission (NAHC) in Sacramento
  - The Amah Mutsun Tribal Band
- The Coroner will have two working days to examine the human remains after being notified of the discovery. If the remains are Native American, the Coroner has 24 hours to notify the NAHC. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD) from the Amah Mutsun Tribal Band. (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.)
- Within 24 hours of their notification by the NAHC, the MLD will be granted permission to inspect the discovery site if they so choose.
- Within 24 hours of their notification by the NAHC, the MLD may recommend to the City's Development Services Director the recommended means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials. Only those osteological analyses or DNA analyses recommended by the Amah Mutsun Tribal Band may be considered and carried out.
- If the MLD recommendation is rejected by the City of Morgan Hill, the parties will attempt to mediate the disagreement with the NAHC. If mediation fails, then the remains and all associated grave offerings shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.

Through the integration of these standard conditions of approval, the proposed project would not result in a significant impact on undiscovered cultural resources. **(Less than Significant Impact)**

Impact CUL-3:	**The project would not disturb any human remains, including those interred outside of dedicated cemeteries. (Less than Significant Impact)**

As stated above the proposed project would require 10 feet of excavation and has the potential to expose undiscovered human remains due to the activities in the areas around the project site. The project would implement the Standard Conditions of Approval above which would reduce the potential impact to a less than significant level. Therefore, the proposed project would not have a significant impact from the disturbance of human remains on the project site. **(Less than Significant Impact)**

4.6 ENERGY

4.6.1 Environmental Setting

4.6.1.1 *Regulatory Framework*

Federal and State

Energy Star and Fuel Efficiency

At the federal level, energy standards set by the EPA apply to numerous consumer products and appliances (e.g., the EnergyStar™ program). The EPA also sets fuel efficiency standards for automobiles and other modes of transportation.

Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2010. Governor Schwarzenegger issued Executive Order (EO) S-3-05, requiring statewide emissions reductions to 80 percent below 1990 levels by 2050. In 2008, EO S-14-08 was signed into law, requiring retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. In October 2015, Governor Brown signed SB 350 to codify California's climate and clean energy goals. A key provision of SB 350 requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable sources by 2030. SB 100, passed in 2018, requires 100 percent of electricity in California to be provided by 100 percent renewable and carbon-free sources by 2045.

Executive Order B-55-18 To Achieve Carbon Neutrality

In September 2018, Governor Brown issued an executive order, EO-B-55-18 To Achieve Carbon Neutrality, setting a statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." The executive order requires CARB to "ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal." EO-B-55-18 supplements EO S-3-05 by requiring not only emissions reductions, but also that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2 from the atmosphere through sequestration.

California Building Standards Code

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6 of the California Code of Regulations (Title 24), was established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 is updated approximately every three years.[14] Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments.[15]

[14] California Building Standards Commission. "California Building Standards Code." Accessed December 21, 2020. https://www.dgs.ca.gov/BSC/Codes#@ViewBag.JumpTo.

[15] California Energy Commission (CEC). "2019 Building Energy Efficiency Standards." Accessed December 21, 2020. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2019-building-energy-efficiency.

4.6.1.2 *Existing Conditions*

The project site is a detention basin and has minimal energy consumption in its existing state. The pump on the northwest corner of the project site would periodically result in energy consumption during storm events however this is not a regular recurring source of energy use.

4.6.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Impact EN-1: The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. (Less than Significant Impact)

Construction

During construction the proposed project would utilize construction equipment and dump trucks to excavate and haul the material from the bottom of the detention basin. The construction process would use the most efficient, cost effective machinery to complete the excavation which would not result in wasteful consumption or accidental loss of fuel on site. In addition, the proposed project would only temporarily result in the use of energy resources on-site. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, during project construction. **(Less than Significant Impact)**

Operational

The proposed project would not contribute to energy consumption during operations because the detention basin does not require lighting or other energy consumptive features. The pump on the northwest side of the site would not be modified as part of the project and would continue to operate during storm events in a manner similar to under existing conditions. Therefore, the proposed project would result in less than significant impacts from energy consumption during operations. **(Less than Significant Impact)**

Impact EN-2:	**The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (Less than Significant Impact)**

The proposed project would not increase the energy consumption of the project site over existing usage and therefore the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **(Less than Significant Impact)**

4.7 GEOLOGY AND SOILS

4.7.1 Environmental Setting

4.7.1.1 *Regulatory Framework*

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed following the 1971 San Fernando earthquake. The act regulates development in California near known active faults due to hazards associated with surface fault ruptures. Alquist-Priolo maps are distributed to affected cities, counties, and state agencies for their use in planning and controlling new construction. Areas within an Alquist-Priolo Earthquake Fault Zone require special studies to evaluate the potential for surface rupture to ensure that no structures intended for human occupancy are constructed across an active fault.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was passed in 1990 following the 1989 Loma Prieta earthquake. The SHMA directs the California Geological Survey (CGS) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, landslides, and ground shaking, including the central San Francisco Bay Area. The SHMA requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the seismic hazard is present and identify measures to reduce earthquake-related hazards.

California Building Standards Code

The CBC prescribes standards for constructing safe buildings. The CBC contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, ground strength, and distance to seismic sources. The CBC requires that a site-specific geotechnical investigation report be prepared for most development projects to evaluate seismic and geologic conditions such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. The CBC is updated every three years.

California Division of Occupational Safety and Health Regulations

Excavation, shoring, and trenching activities during construction are subject to occupational safety standards for stabilization by the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) under Title 8 of the California Code of Regulations and Excavation Rules. These regulations minimize the potential for instability and collapse that could injure construction workers on the site.

Public Resources Code Section 5097.5

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. These materials are valued for the information they yield about the history of the earth and its past ecological settings. California Public Resources Code Section 5097.5 specifies that unauthorized removal of a paleontological resource is a misdemeanor. Under the CEQA Guidelines, a project would have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource or site or unique geologic feature.

4.7.1.2 *Existing Conditions*

Earthquake Faults and Soil Conditions

The nearest fault to the project site, the Coyote Creek Fault Zone, is located two miles to the east. Additionally, the project site is located 3.5 miles from the Calaveras Fault Zone. According to the web soil survey the soils underlaying the project site are classified as San Ysidro loam, 0 to 2 percent slopes which is known to have some amount of shrink swell capacity. The project site has relatively low slope and is not located in a zone at risk of landslides or lateral spreading.[16]

Paleontological Setting

This geologic area is unique and quite unusual because Morgan Hill is located between two major active fault lines including, the Sargent and San Andreas faults to the west in the Santa Cruz Mountains, and the Calaveras fault in the Diablo range to the east.

A byproduct of this active geological area and the geologic units in the Morgan Hill area is the existence of a rare metamorphic stone, Poppy Jasper. Additionally, the geologic units in the Project Area consist of 12 to 15 feet of poorly sorted, fine sandy silt and clayey silt.

Below this, the Santa Clara Valley formation is an older alluvium made up of partially consolidated clay, silt, sand, and gravel deposited more than 11,000 years ago.

4.7.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				

[16] Santa Clara County. Santa Clara County Geologic Hazard Zones. Map. Oct 26, 2012.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
– Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42)?	☐	☐	☒	☐
– Strong seismic ground shaking?	☐	☐	☒	☐
– Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
– Landslides?	☐	☐	☐	☒
2) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
3) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
4) Be located on expansive soil, as defined in the current California Building Code, creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
5) 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?	☐	☐	☐	☒
6) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☒	☐

Impact GEO-1: The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides. (Less than Significant Impact)

The proposed project would not introduce development on the project site and the project site would remain unoccupied. The project site does not contain any earthquake faults and is not at risk of fault rupture or seismic related ground failure in the event of an earthquake.

The project site may undergo strong seismic ground shaking during an earthquake however this would not result in a risk of loss, injury, or death because the project site will continue its current use as a detention basin with engineered slopes.

Finally, the project site is relatively level, other than the basin's engineered slopes, and would not experience landslides in the event of earthquakes. Therefore, the proposed project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. **(Less than Significant Impact)**

Impact GEO-2:	**The project would not result in substantial soil erosion or the loss of topsoil. (Less than Significant Impact)**

Excavation and transport of soil materials related to the proposed project would result in ground disturbance at the site. Ground disturbance would expose soils and increase the potential for wind or water related erosion and sedimentation at the site until construction is complete. The City has developed standard conditions to avoid significant soil erosion impacts during construction. The following conditions would be included as part of the project:

<u>Standard Condition GEO-1 (Storm Drain System)</u>: Prior to final map approval or issuance of a grading permit the City Engineer shall ensure completion of the following:

1. Plan describing how material excavated during construction will be controlled to prevent this material from entering the storm drain system.
2. Water Pollution Control Drawings for Sediment and Erosion Control.

<u>Standard Condition GEO-2 (NPDES Permit Conformance)</u>: As required by the State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, construction activity resulting in a land disturbance of one acre or more of soil, or whose projects are part of a larger common plan of development that in total disturbs more than one (1) acre, are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated with Construction Activity (General Permit). To be permitted with the SWRCB under the General Permit, owners must file a complete Notice of Intent (NOI) package and develop a Storm Water Pollution Prevention Plan (SWPPP) Manual in accordance with Section A, B, and C of the General Permit prior to the commencement of soil disturbing activities. A NOI Receipt Letter assigning a Waste Discharger Identification number to the construction site will be issued after the State Water Resource Control Board (SWRCB) receives a complete NOI package (original signed NOI application, vicinity map, and permit fee); copies of the NOI Receipt Letter and SWPPP shall be forwarded to the Building and Land Development Engineering Divisions review. The SWPPP shall be made a part of the improvement plans (SWRCB NPDES General Permit CA000002).

By implementing the standard conditions discussed above, the project would have a less than significant impact on soil erosion. **(Less than Significant Impact)**

Impact GEO-3:	**The project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. (No Impact)**

The proposed project would not cause the project site to become unstable and as stated above the project site is flat, other than the engineered basin slopes, and does not have a substantial risk of landslides or lateral spreading. Additionally, the project is not located in an area that has a risk of liquefaction and would not encounter subsidence during operations of the detention basin. Therefore, the proposed project would not be located on unstable soil or geologic units and would not result in impacts of landslide, lateral spreading, subsidence, liquefaction, or collapse. **(No Impact)**

Impact GEO-4:	**The project would not be located on expansive soil, as defined in the current California Building Code, creating substantial direct or indirect risks to life or property. (Less than Significant Impact)**

The proposed project is deepening the existing detention basin which has been constructed in compliance with California Building Code requirements. The proposed project would not be impacted by the presence of expansive soils because the soils would not be supporting foundations of structures and the detention basin would be constructed with engineering methods suitable for the soils underlaying the project site. **(Less than Significant Impact)**

Impact GEO-5:	**The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. (No Impact)**

The proposed project does not include structures requiring the use of septic tanks or alternative wastewater disposal systems. Therefore, the proposed project would not result in an impact. **(No Impact)**

Impact GEO-6:	**The project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. (Less than Significant Impact)**

The proposed project would require excavation of the existing detention basin. Excavation of the site occurred when the detention basin was originally constructed, and further excavation is not expected to discover and disturb paleontological resources on-site. Additionally, there are no identified paleontological resources in the City of Morgan Hill. Therefore, the excavation proposed by the project would not cause an impact on a unique paleontological resource or site or unique geological feature. **(Less than Significant Impact)**

4.8 GREENHOUSE GAS EMISSIONS

4.8.1 Environmental Setting

4.8.1.1 *Regulatory Framework*

State

Assembly Bill 32

Under the California Global Warming Solutions Act, also known as AB 32, CARB established a statewide GHG emissions cap for 2020, adopted mandatory reporting rules for significant sources of GHGs, and adopted a comprehensive plan, known as the Climate Change Scoping Plan, identifying how emission reductions would be achieved from significant GHG sources.

In 2016, SB 32 was signed into law, amending the California Global Warming Solution Act. SB 32, and accompanying Executive Order B-30-15, require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of CO_2E ($MMTCO_2e$). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 $MMTCO_2e$.

Senate Bill 375

SB 375, known as the Sustainable Communities Strategy and Climate Protection Act, was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light truck sectors for 2020 and 2035. The per-capita GHG emissions reduction targets for passenger vehicles in the San Francisco Bay Area include a seven percent reduction by 2020 and a 15 percent reduction by 2035.

Consistent with the requirements of SB 375, the Metropolitan Transportation Commission (MTC) partnered with the Association of Bay Area Governments (ABAG), BAAQMD, and the Bay Conservation and Development Commission to prepare the region's Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan process. The SCS is referred to as Plan Bay Area 2040. Plan Bay Area 2040 establishes a course for reducing per-capita GHG emissions through the promotion of compact, high-density, mixed-use neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).

Regional and Local

2017 Clean Air Plan

To protect the climate, the 2017 CAP (prepared by BAAQMD) includes control measures designed to reduce emissions of methane and other super-GHGs that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing GHG impacts developed by BAAQMD within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

4.8.1.2 *Existing Conditions*

Unlike emissions of criteria and toxic air pollutants, which have regional and local impacts, emissions of GHGs have a broader, global impact. Global warming is a process whereby GHGs accumulating in the upper atmosphere contribute to an increase in the temperature of the earth and changes in weather patterns.

The project site does not contain substantial sources of greenhouse gas emissions and does not contribute to emissions besides the pump on the northwest corner of the site.

4.8.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?	☐	☐	☒	☐

Impact GHG-1: The project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. **(Less than Significant Impact)**

The proposed project would generate temporary GHG emissions during construction. These truck emissions would only occur for a period of five weeks while the soil material is removed from the project site. This increase would only represent a small increase in the total GHG emission for the City of Morgan Hill and would not represent a permanent change. Therefore, the proposed project would not result in a significant GHG emission impact.

During operations of the project an increase of GHG is not expected because no new structures or new activities at the site are proposed. The operation of the existing pump would not change as a result of the deepened basin. Therefore, the proposed project would not generate increased operational greenhouse gas emissions. **(Less than Significant Impact)**

Impact GHG-2:	**The project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. (Less than Significant Impact)**

The proposed project would only result in temporary emissions of GHGs during construction and would not conflict with the adoption of policies or plans for reducing GHG emissions Therefore, the proposed project would not result in an impact on reaching SB 32 targets or Clean Air Plan reductions and the proposed project would result in a less than significant impact. **(Less than Significant Impact)**

4.9 HAZARDS AND HAZARDOUS MATERIALS

4.9.1 Environmental Setting

4.9.1.1 *Regulatory Framework*

Overview

The storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated under federal and state laws. In California, the EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (CalEPA). In turn, local agencies have been granted responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) program.

Worker health and safety and public safety are key issues when dealing with hazardous materials. Proper handling and disposal of hazardous material is vital if it is disturbed during project construction. Cal/OSHA enforces state worker health and safety regulations related to construction activities. Regulations include exposure limits, requirements for protective clothing, and training requirements to prevent exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to lead and asbestos investigations and abatement.

Federal and State

Federal Aviation Regulations Part 77

Federal Aviation Regulations, Part 77 Objects Affecting Navigable Airspace (FAR Part 77) sets forth standards and review requirements for protecting the airspace for safe aircraft operation, particularly by restricting the height of potential structures and minimizing other potential hazards (such as reflective surfaces, flashing lights, and electronic interference) to aircraft in flight. These regulations require that the Federal Aviation Administration (FAA) be notified of certain proposed construction projects located within an extended zone defined by an imaginary slope radiating outward for several miles from an airport's runways, or which would otherwise stand at least 200 feet in height above the ground.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five years, $1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. CERCLA accomplished the following objectives:

- Established prohibitions and requirements concerning closed and abandoned hazardous waste sites;

- Provided for liability of persons responsible for releases of hazardous waste at these sites; and
- Established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response; and
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life-threatening. These actions can be completed only at sites listed on the EPA's National Priorities List.

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.[17]

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), enacted in 1976, is the principal federal law in the United States governing the disposal of solid waste and hazardous waste. RCRA gives the EPA the authority to control hazardous waste from the "cradle to the grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous solid wastes.

The Federal Hazardous and Solid Waste Amendments (HSWA) are the 1984 amendments to RCRA that focused on waste minimization, phasing out land disposal of hazardous waste, and corrective action for releases. Some of the other mandates of this law include increased enforcement authority for the EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.[18]

Government Code Section 65962.5

Section 65962.5 of the Government Code requires CalEPA to develop and update a list of hazardous waste and substances sites, known as the Cortese List. The Cortese List is used by state and local agencies and developers to comply with CEQA requirements. The Cortese List includes hazardous substance release sites identified by the Department of Toxic Substances Control (DTSC) and State Water Resources Control Board (SWRCB).[19]

[17] United States Environmental Protection Agency. "Superfund: CERCLA Overview." Accessed May 11, 2020. https://www.epa.gov/superfund/superfund-cercla-overview.
[18] United States Environmental Protection Agency. "Summary of the Resource Conservation and Recovery Act." Accessed May 11, 2020. https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act.
[19] California Environmental Protection Agency. "Cortese List Data Resources." Accessed May 28, 2020. https://calepa.ca.gov/sitecleanup/corteselist/.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) of 1976 provides the EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics, and pesticides. The TSCA addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint.

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) Program aims to prevent accidental releases of regulated hazardous materials that represent a potential hazard beyond the boundaries of a property. Facilities that are required to participate in the CalARP Program use or store specified quantities of toxic and flammable substances (hazardous materials) that can have off-site consequences if accidentally released. The Santa Clara County Department of Environmental Health reviews CalARP risk management plans as the CUPA.

4.9.1.2 *Existing Conditions*

The 5.65-acre project site is utilized as a detention basin. A review of federal, state, and local regulatory agency databases was completed to evaluate the likelihood of contamination incidents at and near the project site. The project site is not identified on any of the regulatory databases and is not on the Cortese list.[20] The San Martin Airport is located approximately 4.5 miles south of the project site. The project site is not located within an Airport Influence Area (AIA) of a Comprehensive Land Use Plan and is not located within an FAA height restriction area for new structures.

4.9.2 **Impact Discussion**

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
2) 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?	☐	☐	☐	☒
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

[20] California Environmental Protection Agency. Cortese List Data Resources. Accessed October 26, 2020. https://calepa.ca.gov/sitecleanup/corteselist/.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
4) 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?	☐	☐	☐	☒
5) 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, result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
6) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
7) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	☒

Impact HAZ-1: The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (No Impact)

The proposed project would operate as a detention basin which does not require the transport, use, or disposal of hazardous materials. The proposed project would therefore create no significant hazard to the public or environment through the transportation of these materials. **(No Impact)**

Impact HAZ-2: The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Less than Significant Impact)

The project site is not included on a list of hazardous materials sites and the site is not expected to contain hazardous materials. The construction of the proposed project would involve the excavation and transport of soils and other materials removed from the bottom of the detention basin. The City would be testing the excavated soils to determine if the material would be suitable as fill on nearby development sites or requires disposal at a nearby landfill. This excavation is not expected to foreseeably encounter hazardous materials and would not create a significant hazard to the public or the environment. During operations, the proposed project would function as a detention basin which would not foreseeably create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving hazardous materials. Therefore, the proposed project would have a less than significant impact related to the release of hazardous materials through foreseeable accidents during construction or operations. **(No Impact)**

Impact HAZ-3:	**The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (No Impact)**

The proposed project would continue to operate as a detention basin and would not require the emission or handling of acutely hazardous materials, substances, or waste. Additionally, the nearest school is located approximately 0.4 miles from the project site. Therefore, the proposed project would result in a no impact from handling hazardous materials within a quarter mile of an existing or proposed school. **(No Impact)**

Impact HAZ-4:	**The project would not 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, create a significant hazard to the public or the environment. (No Impact)**

The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, the proposed project would not create a significant hazard to the public or the environment resulting from hazardous materials sites. **(No Impact)**

Impact HAZ-5:	**The project would not be 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. The project would not result in a safety hazard or excessive noise for people residing or working in the project area. (No Impact)**

The proposed project is an existing detention basin which would continue its use as a detention basin on site. The existing basin does not effect nearby airports and the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area. **(No Impact)**

Impact HAZ-6:	**The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (No Impact)**

The proposed project would not change the on-site use of the project as a detention basin. The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. **(No Impact)**

Impact HAZ-7:	**The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. (No Impact)**

The proposed project would not construct structures or add people to the project site because the project would only modify the depth and storage capacity of an existing detention basin. Therefore,

the proposed project would not create an impact by exposing people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. **(No Impact)**

4.10 HYDROLOGY AND WATER QUALITY

4.10.1 Environmental Setting

4.10.1.1 *Regulatory Framework*

Federal and State

The federal Clean Water Act and California's Porter-Cologne Water Quality Control Act are the primary laws related to water quality in California. Regulations set forth by the EPA and the SWRCB have been developed to fulfill the requirements of this legislation. EPA regulations include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into the waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by the Regional Water Quality Control Boards (RWQCBs). The project site is within the jurisdiction of the Central Coast RWQCB.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) established the National Flood Insurance Program (NFIP) to reduce impacts of flooding on private and public properties. The program provides subsidized flood insurance to communities that comply with FEMA regulations protecting development in floodplains. As part of the program, FEMA publishes Flood Insurance Rate Maps (FIRMs) that identify Special Flood Hazard Areas (SFHAs). An SFHA is an area that would be inundated by the one-percent annual chance flood, which is also referred to as the base flood or 100-year flood.

Statewide Construction General Permit

The State Water Resources Control Board (SWRCB) has implemented an NPDES General Construction Permit for the State of California (Construction General Permit). For projects disturbing one acre or more of soil, a Notice of Intent (NOI) must be filed with the RWQCB by the project sponsor, and a Storm Water Pollution Prevention Plan (SWPPP) must be prepared by a qualified professional prior to commencement of construction and filed with the RWQCB by the project sponsor. The Construction General Permit includes requirements for training, inspections, record keeping, and, for projects of certain risk levels, monitoring. The general purpose of the requirements is to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from the adverse effects of construction-related storm water discharges.

Regional and Local

San Francisco Bay Basin Plan

The San Francisco Bay RWQCB regulates water quality in accordance with the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan lists the beneficial uses that the San Francisco Bay RWQCB has identified for local aquifers, streams, marshes, rivers, and the San Francisco Bay, as well as the water quality objectives and criteria that must be met to protect these uses. The San Francisco Bay RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements, including permits for nonpoint sources such as the urban runoff

discharged by a City's stormwater drainage system. The Basin Plan also describes watershed management programs and water quality attainment strategies.

Municipal Regional Permit Provision C.3

The San Francisco Bay RWQCB re-issued the Municipal Regional Stormwater NPDES Permit (MRP) in 2015 to regulate stormwater discharges from municipalities and local agencies (co-permittees) in Alameda, Contra Costa, San Mateo, and Santa Clara Counties, and the cities of Fairfield, Suisun City, and Vallejo.[21] Under Provision C.3 of the MRP, new and redevelopment projects that create or replace 10,000 square feet or more of impervious surface area are required to implement site design, source control, and Low Impact Development (LID)-based stormwater treatment controls to treat post-construction stormwater runoff. LID-based treatment controls are intended to maintain or restore the site's natural hydrologic functions, maximizing opportunities for infiltration and evapotranspiration, and using stormwater as a resource (e.g. rainwater harvesting for non-potable uses). The MRP also requires that stormwater treatment measures are properly installed, operated, and maintained.

In addition to water quality controls, the MRP requires new development and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to local rivers, streams, and creeks. Projects may be deemed exempt from these requirements if they do not meet the minimized size threshold, drain into tidally influenced areas or directly into the Bay, or drain into hardened channels, or if they are infill projects in subwatersheds or catchment areas that are greater than or equal to 65 percent impervious.

Water Resources Protection Ordinance and District Well Ordinance

Valley Water operates as the flood control agency for Santa Clara County. Their stewardship also includes creek restoration, pollution prevention efforts, and groundwater recharge. Permits for well construction and destruction work, most exploratory boring for groundwater exploration, and projects within Valley Water property or easements are required under Valley Water's Water Resources Protection Ordinance and District Well Ordinance.

Dam Safety

Since August 14, 1929, the State of California has regulated dams to prevent failure, safeguard life, and protect property. The California Water Code entrusts dam safety regulatory power to California Department of Water Resources, Division of Safety of Dams (DSOD). The DSOD provide oversight to the design, construction, and maintenance of over 1,200 jurisdictional sized dams in California.[22]

[21] MRP Number CAS612008

[22] California Department of Water Resources, Division of Safety of Dams. https://water.ca.gov/Programs/All-Programs/Division-of-Safety-of-Dams#:~:text=Since%20August%2014%2C%201929%2C%20the,Safety%20of%20Dams%20(DSOD). Accessed June 9, 2020.

As part of its comprehensive dam safety program, Valley Water routinely monitors and studies the condition of each of its 10 dams. Valley Water also has its own Emergency Operations Center and a response team that inspects dams after significant earthquakes. These regulatory inspection programs reduce the potential for dam failure.

Construction Dewatering Waste Discharge Requirements

Each of the RWQCBs regulate construction dewatering discharges to storm drains or surface waters within its Region under the NPDES program and Waste Discharge Requirements.

4.10.1.2 *Existing Conditions*

The project site is entirely occupied by an existing detention basin. Drainage of the site is directed inward to the detention basin and the entirety of the site is pervious surfaces. The project site is located within the Zone X, 0.2 percent annual chance of flood event, FEMA flood hazard zone designation.

4.10.2 **Impact Discussion**

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
2) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
3) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
– result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
– substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
– create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
– impede or redirect flood flows?	☐	☐	☒	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
4) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
5) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Impact HYD-1: The project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. (Less than Significant Impact)

Construction

Impacts on water quality in the basin could potentially occur as a result of sediment mobilization or contaminant spills during construction. Indirect impacts on Fisher Creek, the local groundwater aquifer, or on general water quality are unlikely due to the distance between these activities and the creek and the filtration process when contaminants leach through the soil horizons; however, the potential for water quality impacts due to these activities is possible.

Standard Condition HYD-1 (Stormwater Management): The proposed project would implement erosion and sediment control measures, as well as BMPs for work near aquatic environments. Construction projects in California causing land disturbances that are equal to one acre or greater must comply with state requirements to control the discharge of storm water pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009- DWQ).

Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including:

- on-site sediment control BMPs
- damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction
- utilization of stabilized construction entrances and/or wash racks,

Through compliance with the above standard condition, the proposed project would not result in significant water quality impacts during construction of the proposed project. **(Less than Significant Impact)**

Operations

The proposed project would continue operations of the detention basin and would not feature increased impervious surfaces or sources of water quality contaminants. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements or substantially degrade surface or ground water quality. **(Less than Significant Impact)**

Impact HYD-2:	**The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. (Less than Significant Impact)**

The proposed project is deepening the existing detention basin located on site. This detention basin has a permeable, natural bottom that allows the water to infiltrate into the ground below. The proposed project would not decrease groundwater supplies or interfere with natural recharge for the project site. Therefore, the proposed project would not substantially decrease groundwater supplies or interfere with groundwater recharge. **(Less than Significant Impact)**

Impact HYD-3:	**The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. (Less than Significant Impact)**

The existing use of the site is a detention basin which captures water from two watersheds. The proposed project would not change the existing use of the site and would improve the detention basin's capability for water detention in high intensity storm events. The proposed project would not introduce additional impervious surfaces and would not result in increased erosion or siltation due to increased impervious surface. Additionally, the proposed project would provide for greater stormwater runoff control for the drainage basin served by the detention basin. Therefore, the proposed project would not alter the existing drainage patterns of the site area, and would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems. **(Less than Significant Impact)**

Impact HYD-4:	**The project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. (No Impact)**

The project site is not located within a tsunami or seiche area. The project site is located within the Zone X, 0.2 percent annual chance of flood event. As discussed in Section 4.9 Hazards and Hazardous Materials, the proposed project would not make the use of hazardous chemicals or other materials that would risk the release of pollutants in the event of inundation. Therefore, the proposed

project would not risk the release of pollutants in the event of inundation resulting from a flood event. **(Less than Significant Impact)**

Impact HYD-5:	**The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (Less than Significant Impact)**

The proposed project would not introduce additional runoff to the drainage system and would not create sources of water pollution that may obstruct the implementation of water quality control plans for the City of Morgan Hill. Additionally, the proposed project would provide greater capacity to the existing stormwater drainage which would decrease the impacts of existing stormwater quality issues.

The detention basin would also provide the same amount of infiltration capacity for groundwater replenishment and would not change the implementation of sustainable groundwater plans for the City of Morgan Hill. **(Less than Significant Impact)**

4.11 LAND USE AND PLANNING

4.11.1 Environmental Setting

4.11.1.1 *Existing Conditions*

The project site is zoned as Open Space and is classified as Open Space in the General Plan. The open space designation is meant to remain unimproved and devoted to the preservation of natural resources, managed production of resources, or public health and safety, as well as to complement adjacent, higher density residential, and commercial development. Allowed uses in the Open Space designation include agriculture, outdoor recreation, and a secondary dwelling unit. One single family home per parcel is allowed, with appropriate permits.

4.11.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Physically divide an established community?	☐	☐	☐	☒
2) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Impact LU-1: The project would not physically divide an established community. (No Impact)

The proposed project would not modify the land use on the project site and would not alter the land uses of areas surrounding the project site. Additionally, the proposed project would not introduce a new incompatible use and would not divide the surrounding community through barriers or other methods. Therefore, the proposed project would not physically divide established communities in the areas surrounding the project. **(No Impact)**

Impact LU-2: The project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant Impact)

The proposed project would not alter the existing uses on the project site, which would continue to be used as a detention basin after improvements are completed. Additionally, the consistency of the proposed project with applicable land use plans, policies, and regulations are discussed in their respective sections in this Initial Study. Therefore, the proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. **(Less than Significant Impact)**

4.12 MINERAL RESOURCES

4.12.1 Environmental Setting

4.12.1.1 *Regulatory Framework*

State

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) was enacted by the California legislature in 1975 to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. As mandated under SMARA, the State Geologist has designated mineral land classifications in order to help identify and protect mineral resources in areas within the state subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board (SMGB), after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

4.12.1.2 *Existing Conditions*

The Morgan Hill General Plan does not identify mineral uses of state, regional or local importance within the city of Morgan Hill.

4.12.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
2) 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?	☐	☐	☐	☒

Impact MIN-1: The project would not result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state. (No Impact)

The proposed project would not occur within an area containing a mineral resource of value to the region or residents of the state. Therefore, the proposed project would not impact the availability of a known mineral resource that would be of value to the region and residents of the state. **(No Impact)**

Impact MIN-2:	**The project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. (No Impact)**

The proposed project would not occur within an area containing a mineral resource of value to the local municipalities. Therefore, the proposed project would not impact the availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. **(No Impact)**

4.13 NOISE

The information in this section is based on the Construction Noise Memo Prepared by Illingworth and Rodkin Inc. dated March 5, 2021. The full memo is included in Appendix D.

4.13.1 Environmental Setting

4.13.1.1 *Regulatory Framework*

Federal

Federal Transit Administration Vibration Limits

The Federal Transit Administration (FTA) has developed vibration impact assessment criteria for evaluating vibration impacts associated with transit projects. The FTA has proposed vibration impact criteria based on maximum overall levels for a single event. The impact criteria for groundborne vibration are shown in Table 4.13-1 below. These criteria can be applied to development projects in jurisdictions that lack vibration impact standards.

Table 4.13-1: Groundborne Vibration Impact Criteria

Land Use Category	Groundborne Vibration Impact Levels (VdB inch/sec)		
	Frequent Event	Occasional Events	Infrequent Events
Category 1: Buildings where vibration would interfere with interior operations	65	65	65
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime use	75	78	83

Source: Federal Transit Administration. *Transit Noise and Vibration Assessment Manual.* September 2018.

Local

City of Morgan Hill Municipal Code.

The City of Morgan Hill's Municipal Code Chapter 8.28 states that "It is unlawful and a misdemeanor for any person to make or continue, or cause to be made or continued, any loud, disturbing, unnecessary or unusual noise or any noise which annoys, disturbs, injures or endangers the comfort, health, repose, peace or safety of other persons within the city." The following sections of the code would be applicable to the project:

1. Construction activities as limited below. "Construction activities" are defined as including but not limited to excavation, grading, paving, demolition, construction, alteration or repair of any building, site, street or highway, delivery or removal of construction material to a site,

or movement of construction materials on a site. Construction activities are prohibited other than between the hours of seven a.m. and eight p.m., Monday through Friday and between the hours of nine a.m. to six p.m. on Saturday. Construction activities may not occur on Sundays or federal holidays. No third person, including but not limited to landowners, construction company owners, contractors, subcontractors, or employers, shall permit or allow any person working on construction activities which are under their ownership, control or direction to violate this provision. Construction activities may occur in the following cases without violation of this provision:

a. In the event of urgent necessity in the interests of the public health and safety, and then only with a permit from the chief building official, which permit may be granted for a period of not to exceed three days or less while the emergency continues and which permit may be renewed for periods of three days or less while the emergency continues.

b. If the chief building official determines that the public health and safety will not be impaired by the construction activities between the hours of eight p.m. and seven a.m., and that loss or inconvenience would result to any party in interest, the chief building official may grant permission for such work to be done between the hours of eight p.m. and seven a.m. upon an application being made at the time the permit for the work is issued or during the progress of the work.

c. The city council finds that construction by the resident of a single residence does not have the same magnitude or frequency of noise impacts as a larger construction project. Therefore, the resident of a single residence may perform construction activities on that home during the hours in this subsection, as well as on Sundays and federal holidays from nine a.m. to six p.m., provided that such activities are limited to the improvement or maintenance undertaken by the resident on a personal basis.

d. Public work projects are exempt from this section and the City Engineer shall determine the hours of construction for public works projects.

e. Until November 30, 1998, construction activities shall be permitted between the hours of ten a.m. to six p.m. on Sundays, subject to the following conditions. No power-driven vehicles, equipment or tools may be used during construction activities, except on the interior of a building or other structure which is enclosed by exterior siding (including windows and doors) and roofing, and which windows and doors are closed during construction activities. Construction activities must be situated at least one hundred fifty feet from the nearest occupied dwelling. No delivery or removal of construction material to a site, or movement of construction materials on a site, is permitted. No activity, including but not limited to the playing of radios, tape players, compact disc players or other devices, which creates a loud or unusual noise which offends, disturbs or harasses the peace and quiet of the persons of ordinary sensibilities beyond the confines of the property from which the sound emanates is allowed.

2. If it is determined necessary in order to ensure compliance with this section, the chief building official may require fences, gates or other barriers prohibiting access to a construction site by construction crews during hours in which construction is prohibited by this subsection. The project manager of each project shall be responsible for ensuring the fences, gates or barriers are locked and/or in place during hours in which no construction is allowed. This subsection shall apply to construction sites other than public works projects or single dwelling units which are not a part of larger projects.

4.13.1.2 *Existing Conditions*

The project site contains a detention basin and does not produce ambient noise under existing conditions. According to the noise contours provided in the General Plan, the project site is within the 60 dBA contour and according to the study prepared by Illingworth and Rodkin the road noise fluctuates between 55 and 65 dBA.[23]

4.13.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
2) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

[23] City of Morgan Hill. 2035 Morgan Hill General Plan FEIR. January 13, 2016.

Impact NOI-1:	**The project would not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Less than Significant Impact)**

Excavation of the Basin

The proposed project is planned to start construction in July 2021 and would be completed by September 2021. The construction activities in the detention basin areas would generate elevated noise levels during the excavation and hauling activities. The estimated noise levels for construction would range between 80 to 90 dBA at a distance of 50 feet from the project site. A more detailed breakdown of the noise generated can be seen in Table 4.13-2 below, under the far-right column entitled Public Works Roads & Highways, Sewers, and Trenches.

Table 4.13-2 Typical Ranges of Construction Noise Levels at 50 feet

	Domestic Housing		**Office Building, Hotel, Hospital, School, Public Works**		**Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station**		**Public Works Roads & Highways, Sewers, and Trenches**	
	I	**II**	**I**	**II**	**I**	**II**	**I**	**II**
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Sensitive receptors for noise impacts in the area surrounding the project site include the City of Morgan Hill El Toro Fire Station (approximately 450 feet west the center of the basin) and the Bender Circle single family residences (approximately 575 feet southwest the center of the basin). The noise levels for the fire station are expected to range from 61 to 68 dBA and noise levels for the housing would range from 59 to 66 dBA during construction. The noise levels for construction would further decrease by approximately five to 10 dBA as the basin is deepened and more barriers are placed between activity and receptors. Therefore, the proposed project would not produce noise levels that would substantially exceed existing noise levels during excavation of the basin.

The proposed project is also located approximately 1,000 to 1,200 feet from the multi and single-family residences along Jarvis Drive and between the Old Monterey Road and the Union Pacific Railroad Tracks. These uses would experience noise levels from 52 to 61 dBA during unshielded

construction and these noise levels would decrease by 5 to 10 dBA as the basin is deepened. As stated above, the traffic noise levels for areas surrounding the project site range from 55 to 65 dBA. Therefore, the proposed project would not produce construction noise levels that would substantially exceed existing noise levels during excavation of the basin. **(Less than Significant Impact)**

Hauling of Soil and Debris

Once materials are excavated from the Fisher Basin, the project proposes to haul these materials to the Kirby Canyon Landfill for disposal or to an unspecified development site in the City in need of surplus soil. Haul trucks would either utilize the route of Jarvis Drive to Monterey Road to Cochrane Road to Highway 101, or alternatively, the proposed project would use the new Sutter Boulevard extension to Butterfield Boulevard to Cochrane Road and Highway 101.

Based on the estimate of 50,581 cubic yards of materials and 12 cubic yards of hauling capacity per truck, the proposed project would require 256 truck hauls daily over the course of a 10-hour period over five weeks. Approximately 26 trips would occur each hour of the standard workday and these trips would create noise levels ranging from 54 to 57 dBA. This would typically be below the below ambient traffic noise levels in the area and would result in a less than significant impact. **(Less than Significant Impact)**

Operational Impacts

The proposed project would continue to be used as a detention basin which would not alter the existing noise levels of the site. No change in the operation of the existing pump is proposed or expected. Therefore, there would be no impact on noise levels at the site during operations. **(No Impact)**

Impact NOI-2: The project would not result in generation of excessive groundborne vibration or groundborne noise levels. (Less than Significant Impact)

Construction Impacts

The proposed project would generate vibration through the operations of construction equipment on site during the excavation of the basin. The nearest uses to the project site are approximately 450 feet from the detention basin which is well outside the distance where construction equipment would create perceptible vibrations. Vibrations of standard construction equipment are described below in Table 4.13-3.

Table 4.13-3 Typical Vibratory Intensity at Different Distances

Equipment		PPV (in/sec)			
		Source Level (25 ft)	50 feet from the Project Site	110 feet from the Project Site	150 feet from the Project Site
Clam shovel drop		0.202	0.094	0.040	0.028
Hydromill (slurry wall)	in soil	0.008	0.004	0.002	0.001
	in rock	0.017	0.008	0.003	0.002

Vibratory Roller	0.210	0.098	0.041	0.029
Hoe Ram	0.089	0.042	0.017	0.012
Large bulldozer	0.089	0.042	0.017	0.012
Caisson drilling	0.089	0.042	0.017	0.012
Loaded trucks	0.076	0.035	0.015	0.011
Jackhammer	0.035	0.016	0.007	0.005
Small bulldozer	0.003	0.001	0.001	0.000
Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, FTA Report No. 0123, September 2018, as modified by Illingworth & Rodkin, Inc., July 2020.				

The historic train trestle located adjacent to the site would also experience some vibration from construction, however, these would be less than the current daily operation of train traffic over the trestle and would not represent a significant impact. Based on the distance of the project site from any buildings, construction of the proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels. **(Less than Significant Impact)**

Operations

The proposed project would continue to be operated as a detention basin which does not create vibratory impacts under existing conditions. Therefore, operations of the proposed project would have no vibratory impacts. **(No Impact)**

Impact NOI-3:	**The project would not be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport. The project would not expose people residing or working in the project area to excessive noise levels. (No Impact)**

The proposed project would not introduce sensitive land uses for excessive noise levels because the proposed project would retain the existing detention basin use. Additionally, the project site is located more than two miles from any airports in the area. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels from airports or airstrips. **(No Impact)**

4.14 POPULATION AND HOUSING

4.14.1 Environmental Setting

4.14.1.1 *Regulatory Framework*

State

Housing-Element Law

State requirements mandating that housing be included as an element of each jurisdiction's general plan is known as housing-element law. The Regional Housing Need Allocation (RHNA) is the state-mandated process to identify the total number of housing units (by affordability level) that each jurisdiction must accommodate in its housing element. California housing-element law requires cities to: 1) zone adequate lands to accommodate its RHNA; 2) produce an inventory of sites that can accommodate its share of the RHNA; 3) identify governmental and non-governmental constraints to residential development; 4) develop strategies and a work plan to mitigate or eliminate those constraints; and 5) adopt a housing element and update it on a regular basis.[24] The City of Morgan Hill Housing Element and related land use policies were last updated in 2015.

Regional and Local

Plan Bay Area 2040

Plan Bay Area 2040 is a long-range transportation, land-use, and housing plan intended support a growing economy, provide more housing and transportation choices, and reduce transportation-related pollution and GHG emissions in the Bay Area. Plan Bay Area 2040 promotes compact, mixed-use residential and commercial neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).[25]

ABAG allocates regional housing needs to each city and county within the nine-county San Francisco Bay Area, based on statewide goals. ABAG also develops forecasts for population, households, and economic activity in the Bay Area. ABAG, MTC, and local jurisdiction planning staff created the Regional Forecast of Jobs, Population, and Housing, which is an integrated land use and transportation plan through the year 2040 (upon which Plan Bay Area 2040 is based).

4.14.1.2 *Existing Conditions*

The project site does not contain housing or businesses that contribute to the population of Morgan Hill.

[24] California Department of Housing and Community Development. "Regional Housing Needs Allocation and Housing Elements" Accessed December 21, 2020. http://hcd.ca.gov/community-development/housing-element/index.shtml.
[25] Association of Bay Area Governments and Metropolitan Transportation Commission. "Project Mapper." http://projectmapper.planbayarea.org/. Accessed December 21, 2020.

4.14.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
2) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Impact POP-1:	**The project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure). (Less than Significant Impact)**

The proposed project would not contribute to population growth in the area surrounding the project site. Expansion of the detention basin would provide additional drainage for the area around the proposed project however this would not expand the potential for future development in the area. Therefore, the proposed project would not induce substantial unplanned population growth in an area, either directly or indirectly. **(Less than Significant Impact)**

Impact POP-2:	**The project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. (No Impact)**

The proposed project is not occupied by housing and therefore, would not relocate existing people or housing, necessitating the construction of replacement housing. **(No Impact)**

4.15 PUBLIC SERVICES

4.15.1 Environmental Setting

4.15.1.1 *Regulatory Framework*

State

Government Code Section 66477

The Quimby Act (included within Government Code Section 66477) requires local governments to set aside parkland and open space for recreational purposes. It provides provisions for the dedication of parkland and/or payment of fees in lieu of parkland dedication to help mitigate the impacts from new residential developments. The Quimby Act authorizes local governments to establish ordinances requiring developers of new residential subdivisions to dedicate parks, pay a fee in lieu of parkland dedication, or perform a combination of the two.

Government Code Section 65995 through 65998

California Government Code Section 65996 specifies that an acceptable method of offsetting a project's effect on the adequacy of school facilities is the payment of a school impact fee prior to the issuance of a building permit. Government Code Sections 65995 through 65998 set forth provisions for the payment of school impact fees by new development by "mitigating impacts on school facilities that occur (as a result of the planning, use, or development of real property" (Section 65996[a]). The legislation states that the payment of school impact fees "are hereby deemed to provide full and complete school facilities mitigation" under CEQA (Section 65996[b]).

Developers are required to pay a school impact fee to the school district to offset the increased demands on school facilities caused by the proposed residential development project. The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Regional and Local

Countywide Trails Master Plan

The Santa Clara County Trails Master Plan Update is a regional trails plan approved by the Santa Clara County Board of Supervisors. It provides a framework for implementing the County's vision of providing a contiguous trail network that connects cities to one another, cities to the county's regional open space resources, County parks to other County parks, and the northern and southern urbanized regions of the County. The plan identifies regional trail routes, sub-regional trail routes, connector trail routes, and historic trails.

4.15.1.2 *Existing Conditions*

The project site does not necessitate the need for public services such as schools, parks, or other public facilities such as community centers.

Fire Protection

The project site ls located approximately 150 feet from the nearest fire station, El Toro Fire Station, located at 18300 Old Monterey Road in Morgan Hill.

Police Protection

The project site is nearest to the Morgan Hill Police Department located approximately 2 miles to the south at 16200 Vineyard Boulevard in Morgan Hill.

4.15.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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:				
1) Fire Protection?	☐	☐	☐	☒
2) Police Protection?	☐	☐	☐	☒
3) Schools?	☐	☐	☐	☒
4) Parks?	☐	☐	☐	☒
5) Other Public Facilities?	☐	☐	☐	☒

Impact PS-1:	**The project would not 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 fire protection services. (No Impact)**

The existing use of the project site would not be altered by the proposed project. The fire services provided by the nearby fire station would not be impacted by the proposed project and no new facilities would be needed. Therefore, the proposed project would result in no impact on the provision of fire protection services. **(No Impact)**

Impact PS-2:	**The project would not 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 police protection services. (No Impact)**

The existing use of the project site would not be altered by the proposed project. The police protection services provided by the nearby police station would not be impacted by the proposed project and no new facilities would be needed. Therefore, the proposed project would result in no impact on the provision of police protection services. **(No Impact)**

Impact PS-3:	**The project would not 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 schools. (No Impact)**

The proposed project is excavation of an existing detention basin, this would result in no impact on school facilities because the project neither requires nor expands the need for school facilities. **(No Impact)**

Impact PS-4:	**The project would not 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 parks. (No Impact)**

The proposed project is excavation of an existing detention basin, this would result in no impact on park facilities because the project neither requires nor expands the need for park facilities. **(No Impact)**

Impact PS-5:	**The project would not 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 other public facilities. (No Impact)**

The proposed project is excavation of an existing detention basin, this would result in no impact on other public facilities because the project neither requires nor expands the need for other public facilities. **(No Impact)**

4.16 RECREATION

4.16.1 Environmental Setting

4.16.1.1 *Regulatory Framework*

State

Government Code Section 66477

The Quimby Act (included within Government Code Section 66477) requires local governments to set aside parkland and open space for recreational purposes. It provides provisions for the dedication of parkland and/or payment of fees in lieu of parkland dedication to help mitigate the impacts from new residential developments. The Quimby Act authorizes local governments to establish ordinances requiring developers of new residential subdivisions to dedicate parks, pay a fee in lieu of parkland dedication, or perform a combination of the two.

4.16.1.2 *Existing Conditions*

The project site does not feature park facilities and does not contain population that contributes to the use of park facilities. The nearest park facility is Sierra Park located approximately 600 feet west of the project site on Llagas Road.

4.16.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
2) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Impact REC-1: The project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. (No Impact)

The proposed project would not increase the population of Morgan Hill and would not accelerate the deterioration of park facilities. Therefore, the project would have no impact on the physical condition of park facilities. **(No Impact)**

Impact REC-2:	**The project does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. (No Impact)**

The proposed project only includes the excavation of the existing basin and would not require the construction or expansion of recreational facilities. Therefore, the proposed project would have no adverse physical impact associated with the construction of expansion of recreational facilities. **(No Impact)**

4.17 TRANSPORTATION

4.17.1 Environmental Setting

4.17.1.1 *Regulatory Framework*

State

Regional Transportation Plan

MTC is the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area, including Santa Clara County. MTC is charged with regularly updating the Regional Transportation Plan, a comprehensive blueprint for the development of mass transit, highway, airport, seaport, railroad, bicycle, and pedestrian facilities in the region. MTC and ABAG adopted Plan Bay Area 2040 in July 2017, which includes a Regional Transportation Plan to guide regional transportation investment for revenues from federal, state, regional and local sources through 2040.

Senate Bill 743

SB 743 establishes criteria for determining the significance of transportation impacts using a vehicle miles traveled (VMT) metric intended to promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. Specifically, SB 743 requires analysis of VMT in determining the significance of transportation impacts. Local jurisdictions were required by Governor's Office of Planning and Research (OPR) to implement a VMT policy by July 1, 2020.

Regional and Local

Congestion Management Program

VTA oversees the Congestion Management Program (CMP), which is aimed at reducing regional traffic congestion. The relevant state legislation requires that urbanized counties in California prepare a CMP in order to obtain each county's share of gas tax revenues. State legislation requires that each CMP define traffic LOS standards, transit service standards, a trip reduction and transportation demand management plan, a land use impact analysis program, and a capital improvement element. VTA has review responsibility for proposed development projects that are expected to affect CMP-designated intersections.

4.17.1.2 *Existing Conditions*

The project site does not contain sources of trips and does not generate traffic during normal operations.

4.17.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian facilities?	☐	☐	☒	☐
2) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
3) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
4) Result in inadequate emergency access?	☐	☐	☐	☒

Impact TRN-1: The project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian facilities. (Less than Significant Impact)

The proposed project would not generate trips on an ongoing basis that would affect the existing roadways or other modes of transportation in the area. Construction activity would occur over five weeks and utilize two Haul Routes with approximately 336 trips per day. The haul routes would either exit the site from the northwest corner onto Monterey Road and then proceed down Cochrane Road to Highway 101 or exit the site on the southeast boundary, proceed north on Butterfield Boulevard, and turn onto Cochrane to continue to Highway 101.

The increased truck traffic would not contribute substantially to traffic on these major roadways and would not impact pedestrians or bicycle routes. Additionally, the short-term nature of the construction traffic would mean that the traffic patterns would only be temporarily changed and would not substantially alter traffic patterns along the haul routes. Therefore, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle lanes, and pedestrian facilities. **(Less than Significant Impact)**

Impact TRN-2: The project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). (Less than Significant Impact)

The proposed project would not contribute to operational VMT and would only require temporary trips to and from the site for hauling of soils and other materials during construction. Therefore, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b) because the proposed project would not generate additional VMT during operations of the project. **(Less than Significant Impact)**

Impact TRN-3:	**The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (No Impact)**

The proposed project would not alter the circulation of roads in the area surrounding the project site. The proposed haul routes for transporting excavated soil are currently used by trucks on a regular basis. Therefore, the proposed project would not increase hazards due to a geometric design feature or incompatible use. **(No Impact)**

Impact TRN-4:	**The project would not result in inadequate emergency access. (No Impact)**

Access to the site would be maintained and emergency access would be maintained through coordination with the City of Morgan emergency service providers. Additionally, the access points to the project site would not be modified, therefore, the proposed project would have no impact on emergency access. **(No Impact)**

4.18 TRIBAL CULTURAL RESOURCES

4.18.1 Environmental Setting

4.18.1.1 *Regulatory Framework*

State

Assembly Bill 52

AB 52, effective July 2015, established a new category of resources for consideration by public agencies called Tribal Cultural Resources (TCRs). AB 52 requires lead agencies to provide notice of projects to tribes that are traditionally and culturally affiliated with the geographic area if they have requested to be notified. Where a project may have a significant impact on a tribal cultural resource, consultation is required until the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource or until it is concluded that mutual agreement cannot be reached.

Under AB 52, TCRs are defined as follows:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are also either:
  - Included or determined to be eligible for inclusion in the California Register of Historic Resources, or
  - Included in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).
- A resource determined by the lead agency to be a TCR.

4.18.1.2 *Existing Conditions*

AB 52 requires lead agencies to conduct formal consultations with California Native American tribes during the CEQA process to identify tribal cultural resources that may be subject to significant impacts as a result of a project. This consultation requirement applies only if the tribes have sent written requests for notification of projects to the lead agency. The City of Morgan Hill has not been contacted for notification and consultation by a tribe pursuant to AB 52.

4.18.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project 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 the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				

1) 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)?	☐	☐	☒	☐
2) 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.	☐	☐	☒	☐

Impact TCR-1:	**The project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k). (Less than Significant Impact)**

As described in Section 4.18.1, no tribes have requested notice under AB 52 and no known tribal cultural resources are present on-site.

However, in the event of the unintentional discovery of undocumented human remains or other tribal cultural resources, measures listed under Standard Condition CUL-1 would be implemented. For these reasons, the project would not cause an adverse change in the significance of tribal cultural resources listed on the California Register or City of Morgan Hill historic properties inventory. **(Less than Significant Impact)**

Impact TCR-2:	**The project would not cause a substantial adverse change in the significance of a tribal cultural resource that is 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. (Less than Significant Impact)**

As discussed in the response to Impact TCR-1, there are no known tribal cultural resources on-site. The project would, therefore, have a less than significant impact in the significance of a tribal cultural resource. **(Less than Significant Impact)**

4.19 UTILITIES AND SERVICE SYSTEMS

4.19.1 Environmental Setting

4.19.1.1 *Existing Conditions*

The project site is a detention basin that does not have utilities connections. Water drains into the detention basin through multiple stormwater drainage inlets including a 24-inch stormdrain pipe on the northeast side of the basin, an 84-inch stormdrain pipe on the east corner of the basin, and an 18-inch stormdrain pipe on the south corner of the basin. In addition, the project site features two 30-inch inlet pipes leading to a pump station with pumps into a 48-inch concrete stormdrain on the north corner of the basin.

4.19.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
1) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
2) Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
3) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
4) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
5) Be noncompliant with federal, state, or local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Impact UTL-1:	**The project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. (No Impact)**

The proposed project would not increase the need for water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities at the project site because the proposed project would retain the use of a detention basin on site. Additionally, alterations to the detention basin would not alter the storm drainage system leading into the detention basin. Therefore, the proposed project would not result in the relocation or construction of new and expanded facilities and would have no impact on the environment from the construction of these facilities. **(No Impact)**

Impact UTL-2:	**The project would not have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years. (No Impact)**

The proposed project would not require water supplies to serve the project, nor would it affect groundwater recharge to the underlying aquifer. Therefore, the proposed project would have no impact on water supplies. **(No Impact)**

Impact UTL-3:	**The project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (No Impact)**

The proposed project would not require wastewater treatment capacity to serve the project. Therefore, the proposed project would have no impact on wastewater treatment capacity. **(No Impact)**

Impact UTL-4:	**The project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. (Less than Significant Impact)**

During construction to proposed project would require the disposal of soil and other debris to local waste disposal sites, in the event excavated soils are not suitable for use in a development site needing fill soils. The 50,000 cubic yards of material is a small fraction of the remaining capacity of the nearby landfills and therefore this would not represent a significant impact on local infrastructure. During operations the proposed project would not contribute to solid waste disposal capacity and therefore, the proposed project would not impact solid waste disposal needs. **(Less than Significant Impact)**

Impact UTL-5:	**The project would not be noncompliant with federal, state, or local management and reduction statutes and regulations related to solid waste. (Less than Significant Impact)**

The proposed project would not require substantial, ongoing waste disposal and would comply with all waste disposal regulations and management statues. Additionally, the proposed project would not require waste disposal during operations and therefore, the proposed project would maintain compliance with federal, state, or local management and reduction statutes and regulations related to solid waste. **(Less than Significant Impact)**

4.20 WILDFIRE

4.20.1 Environmental Setting

4.20.1.1 *Regulatory Framework*

State

Fire Hazard Severity Zones

CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. Referred to as Fire Hazard Severity Zones (FHSZs), these maps influence how people construct buildings and protect property to reduce risk associated with wildland fires. FHSZs are divided into areas where the state has financial responsibility for wildland fire protection, known as state responsibility areas (SRAs), and areas where local governments have financial responsibility for wildland fire protection, known as local responsibility areas (LRAs). Homeowners living in an SRA are responsible for ensuring that their property is in compliance with California's building and fire codes. Only lands zoned for very high fire hazard are identified within LRAs.

California Fire Code Chapter 47

Chapter 47 of the California Fire Code sets requirements for wildland-urban interface fire areas that increase the ability of buildings to resist the intrusion of flame or burning embers being projected by a vegetation fire, in addition to systematically reducing conflagration losses through the use of performance and prescriptive requirements.

California Public Resources Code Section 4442 through 4431

The California Public Resources Code includes fire safety regulations that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment that uses an internal combustion engine; specify requirements for the safe use of gasoline-powered tools on forest-covered land, brush-covered land, or grass-covered land; and specify fire suppression equipment that must be provided onsite for various types of work in fire-prone areas. These regulations include the following:

- Earthmoving and portable equipment with internal combustion engines would be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (Public Resources Code Section 4442);
- Appropriate fire suppression equipment would be maintained during the highest fire danger period, from April 1 to December 1 (Public Resources Code Section4428);
- On days when a burning permit is required, flammable materials would be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor would maintain appropriate fire suppression equipment (Public Resources Code Section 4427); and
- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines would not be used within 25 feet of any flammable materials (Public Resources Code Section 4431).

California Code of Regulations Title 14

The California Board of Forestry and Fire Protection has adopted regulations, known as SRA Fire Safe Regulations, which apply basic wildland fire protection standards for building, construction, and development occurring in a SRA. The future design and construction of structures, subdivisions and developments in SRAs are required to provide for the basic emergency access and perimeter wildfire protection measures discussed in Title 14.

Fire Management Plans

CAL FIRE has developed an individual Unit Fire Management Plan for each of its 21 units and six contract counties. CAL FIRE has developed a strategic fire management plan for the Santa Clara County Unit, which covers the project area and addresses citizen and firefighter safety, watersheds and water, timber, wildlife and habitat (including rare and endangered species), unique areas (scenic, cultural, and historic), recreation, range, structures, and air quality. The plan includes stakeholder contributions and priorities and identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire issues.

4.20.1.2 *Existing Conditions*

The project site is not located in the very high fire severity zone as determined by the Cal Fire's Fire and Resource Assessment Program (FRAP) maps.[26]

4.20.2 Impact Discussion

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
1) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
2) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
3) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

[26] Cal Fire. Fire and Resource Assessment Program Very High Fire Severity Map: Morgan Hill. October 9, 2008.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
4) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

The project site is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones; therefore, the project would not result in wildfire impacts. **(No Impact)**

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
2) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
3) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Impact MFS-1: The project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. (Less than Significant Impact)

As discussed in the previous sections of this Initial Study, the proposed project would not degrade the quality of the environment with implementation of identified Standard Permit Conditions and mitigation measures. As discussed in Section 4.4, Biological Resources, with implementation of the identified standard Habitat Plan measures, the project would not significantly impact sensitive habitats or species. As discussed in Section 4.5, Cultural Resources, with implementation of the identified standard measures, the project would result in a less than significant impact on archaeological resources. The project would have a less than significant impact on the historic train trestle and would have no impact on tribal cultural resources. **(Less than Significant Impact)**

Impact MFS-2:	**The project does not have impacts that are individually limited, but cumulatively considerable. (Less than Significant Impact)**

Under Section 15065(a)(3) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has potential environmental effects "that are individually limited, but cumulatively considerable." As defined in Section 15065(a)(3) of the CEQA Guidelines, cumulatively considerable means "that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." This Initial Study evaluates the environmental impacts of the proposed basin excavation project. This Initial Study also takes into account other past, pending, and probable future projects whose impacts could combine to produce cumulative impacts.

Resource Topics not Impacted by the Project

The project would result in no wildfire hazards and would have no impact on aesthetics, agricultural resources, mineral resources, public services, recreational facilities, or wildfire; therefore, the project has no potential to combine with other projects to result in cumulative impacts to those resources. **(No Cumulative Impact)**

Resource Topics with Less than Significant Project Impacts

Air Quality

The proposed project would contribute to emissions in the air basin during the construction period of the project. Additionally, the construction would create dust in the form of $PM_{2.5}$ And PM_{10} which would be mitigated through best management practices on site. With the incorporation of best management practices, the proposed project would not significantly contribute to harmful particulates in the area around the project site. Additionally, the proposed project would only temporarily contribute to air quality impacts in the area and would not significantly contribute to cumulative impacts in the project area. Therefore, the proposed project would not result in significant cumulative impacts to air quality. **(Less than Significant Cumulative Impact)**

Biological Resources

The proposed project would disturb species and habitats on site and result in the removal of wetland areas within the detention basin. The proposed project would comply with the Habitat Plan protecting biological resources in the area which would require the payment of fees and incorporation of standard conditions to reduce impacts and protect resources in the environment around the project site. The proposed project is adjacent to two other detention basin excavations within the same parcel, which have been analyzed in other environmental clearances. These basins would contribute to impacts near the project site however, they would also have to comply with the conditions in the habitat plan and would have their impact reduced to a less than significant level and would not contribute to a significant cumulative impact. Through compliance with the Habitat Plan the impacts of the proposed project would be limited to the project site and would not significantly contribute to impacts in the surrounding area. Therefore, the proposed project would have a less than significant cumulative impact. **(Less than Significant Cumulative Impact)**

Cultural and Tribal Cultural Resources

The proposed project would require the excavation of the bottom of the detention basin which would potentially disturb unknown cultural resources on site. The proposed project would comply with standard measures protecting cultural resources if they are discovered on site, therefore, the proposed project would not result in significant cumulative impacts because the project would not contribute to the loss of cultural resources within the area around the project site. Other construction and development projects in the area would be subject to the same standard measures to protect known and unknown resources that may be present. **(Less than Significant Cumulative Impact)**

Energy Resources

The proposed project would utilize energy resources efficiently during construction and would not contribute to long term increases in energy at the project site. The proposed project would not significantly contribute to ongoing energy impacts or create a substantial use in energy which would interfere with the implementation of energy conservation plans. Therefore, the proposed project would have a less than significant cumulative impact. **(Less than Significant Cumulative Impact)**

Geology and Soil Resources

The proposed project would disturb soil on site however, construction of the project would incorporate standard construction measures to prevent the loss of soil on site. The detention basin would not increase the risk of loss of life or damage of property as a result of geologic incident. Therefore, the proposed project would result in a less than significant cumulative impact. **(Less than Significant Cumulative Impact)**

Greenhouse Gas Emissions

The proposed project would temporarily result in emissions from increased construction activities, however the proposed project on its own would not significantly result in the release of greenhouse gas emission. Therefore, the proposed project would have a less than significant cumulative impact on greenhouse gas emission in the air basin. **(Less than Significant Cumulative Impact)**

Hazards and Hazardous Materials

The project would not increase the concentration of hazardous materials used on site or result in the transport of hazardous materials in the area around the project site. Therefore, the project would not impact the surrounding sites and would not result in cumulative increases in hazards around the project site. **(Less than Significant Cumulative Impact)**

Hydrologic Resources

The proposed project would incorporate standard measures to prevent water quality impacts during construction as a result of ground disturbance within the detention basin. The proposed project would have a localized less than significant impact and would not substantially contribute to water quality issues in water bodies around the project site. Therefore, the proposed project would result in a less than significant cumulative impact. **(Less than Significant Cumulative Impact)**

Land Use

The proposed project would not substantially change the land uses on the project site and would not contribute to changes in the surrounding land uses. Therefore, the proposed project would result in a less than significant cumulative impact. **(Less than Significant Cumulative Impact)**

Noise

The proposed project would create construction noise for the five week duration of the excavation of the detention basin, however the construction of the basin would not coincide with the construction of other surrounding projects and the proposed project would result in a less than significant cumulative impact. Once constructed, the project would not contribute to operational noise in the area. **(Less than Significant Cumulative Impact)**

Population

The proposed project would allow for greater drainage capacity for the surrounding area, however this would not eliminate an existing constraint on growth, and would have no impact on the prospective development planned in the surrounding area beyond what is planned in the General Plan. Additionally, the proposed construction would not displace existing housing, therefore, the proposed project would not contribute to significant cumulative population and housing impacts. **(Less than Significant Cumulative Impact)**

Transportation

The proposed project would not alter the transportation systems in the area around the project site and would only result in temporary traffic increases during construction due to soil hauling. The proposed project would not contribute to existing transportation impacts in the area and would not result in long term impacts to the area around the project site. Therefore, the proposed project would have a less than significant cumulative impact. **(Less than Significant Cumulative Impact)**

Utilities

The proposed project would result in a minor increase in solid waste generation through the transport of soil to local landfills. This waste would be a minor increase in the overall waste disposal of the county and would not significantly contribute to an increase in solid waste. Therefore, the proposed project would result in a less than significant cumulative impact. **(Less than Significant Cumulative Impact)**

Impact MFS-3:	**The project does not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly. (Less than Significant Impact)**

Consistent with Section 15065(a)(4) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that the project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. Pursuant to this standard, a change to the physical environment that might otherwise be minor must

be treated as significant if people would be significantly affected. This factor relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals. While changes to the environment that could indirectly affect human beings would be represented by all of the designated CEQA issue areas, the impact areas of the project that could directly affect human beings is air quality. Implementation of the best management practices, standard permit conditions, mitigation measures, and adherence to General Plan, City Code, and state and federal regulations described in these sections of the report, would avoid significant impacts. No other direct or indirect adverse effects on human beings have been identified. **(Less than Significant Impact)**

SECTION 5.0 REFERENCES

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SECTION 6.0 LEAD AGENCY AND CONSULTANTS

6.1 LEAD AGENCY

City of Morgan Hill
Chris Ghione, Director of Public Works
Yat Cho, Senior Project Manager

6.2 CONSULTANTS

David J. Powers & Associates, Inc.
Environmental Consultants and Planners
Akoni Danielsen, Principal Project Manager
Patrick Kallas, Associate Project Manager
Ryan Osako, Graphics Artist

Illingworth and Rodkin, Inc.
Air Quality and Noise Consultant

Live Oak Associates, Inc.
Arborist

H.T. Harvey and Associates, Inc.
Biological Consultant

FISHER DETENTION BASIN CONSTRUCTION HEALTH RISK ASSESSMENT

Morgan Hill, California

March 11, 2021

Prepared for:

Patrick Kallas
David J. Powers & Associates
1871 The Alameda, Suite 200
San Jose, CA 95126

Prepared by:

Zachary Palm
& James Reyff

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Cotati, CA 94931
(707) 794-0400

Project: #20-109

INTRODUCTION

The City of Morgan Hill is evaluating the environmental impacts of activities planned to construct a water detention basin located at the intersection of Monterey Road and the Railroad Tracks across the road from the El Toro Fire Station (18300 Old Monterey Rd, Morgan Hill, CA). The project would involve the excavation and transport of approximately 45,000 cubic yards of soil over the course of 5-6 weeks with disposal of the soil taking place at either Kirby Canyon Landfill or the Trammel Crow site (which is approximately 2 miles of the project). Although this activity is temporary, construction impacts from off-road equipment and from truck trips could affect nearby sensitive receptors. There are existing residences approximately 300 feet to the west of the project site and 900 feet to the north which could experience increased noise with the truck trips.

The purpose of this report is to predict air pollutant and toxic air contaminant (TAC) emissions during construction and predict the health risk impacts to nearby sensitive receptors. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Setting

The project is located in Santa Clara County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduce lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

TACs are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015.[2] See *Attachment 1* for a detailed description of the community risk modeling methodology used in this assessment.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the Federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel engines are a significant source of nitrogen oxides, or NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified diesel particulate matter as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce PM and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[3]

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[2] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

[3] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD) is currently required for use by all vehicles in the U.S.

All of the above Federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles[4]. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road, or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

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[4] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program addresses communities with higher air pollution levels. The program identifies areas where vulnerable populations are exposed to higher levels, applies the scientific methods and strategies to reduce air pollution health impacts in these areas and engages the community and other agencies to develop additional actions to reduce impacts. BAAQMD has developed maps that show areas with elevated pollution levels and identified impacted areas. Morgan Hill does not fall under any of these impacted areas.

The BAAQMD *California Environmental Quality Act (CEQA) Air Quality Guidelines*[5] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed community risk modeling methodology.

Morgan Hill 2035 General Plan

Adopted July 27, 2016, the *Morgan Hill 2035 General Plan* includes goals, policies, and actions to improve air quality issues facing the City of Morgan Hill.[6] The following goals, policies, and actions are applicable to the proposed project:

<u>Goal NRE-10:</u> Reduced air pollution emissions.

Policy NRE-10.2 **State and Federal Regulation**. Encourage effective regulation of mobile and stationary sources of air pollution and support State and federal regulations to improve automobile emission controls.

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[5] Bay Area Air Quality Management District, 2011. *CEQA Air Quality Guidelines*. May. (Updated May 2017)
[6] City of Morgan Hill, California (2016). "Chapter 8 Natural Resources and Environment". *City of Morgan Hill General Plan 2035.* https://www.morgan-hill.ca.gov/DocumentCenter/View/22839/MH2035-General-Plan---December-2017?bidId=

<u>Goal NRE-11:</u> Minimized exposure of people to toxic air contaminants such as ozone, carbon monoxide, lead, and particulate matter.

Policy NRE-11.3 **Health Risk Assessments.** For proposed development that emits toxic air contaminants, require project proponents to prepare health risk assessments in accordance with Bay Area Air Quality Management District procedures as part of environmental review and implement effective mitigation measures to reduce potential health risks to less-than-significant levels. Alternatively, require these projects to be located an adequate distance from residences and other sensitive receptors to avoid health risks. Consult with the Bay Area Air Quality Management District to identify stationary and mobile toxic air contaminant sources and determine the need for and requirements of a health risk assessment for proposed developments

Policy NRE-11.4 **Truck Routes**. For development projects generating significant heavy-duty truck traffic, designate truck routes that minimize exposure of sensitive receptors to toxic air contaminants and particulate matter.

Policy NRE-11.5 **Truck Idling**. For development projects generating significant truck traffic, require signage to remind drivers that the State truck idling law limits truck idling to five (5) minutes.

Policy NRE-11.6 **Vegetation Buffers**. Encourage the use of pollution-absorbing trees and vegetation in buffer areas between substantial sources of toxic air contaminants and sensitive receptors.

<u>Goal NRE-12:</u> Minimized air pollutant emissions from demolition and construction activities

Policy NRE-12.1: **Best Practices.** Requirement that development projects implement best management practices to reduce air pollutant emissions associated with construction and operation of the project.

Policy NRE-12.2 **Conditions of Approvals.** Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At a minimum, conditions shall conform to construction mitigation measures recommended in the current Bay Area Air Quality Management District CEQA Guidelines.

Policy NRE-12.3 **Control Measures.** Require construction and demolition projects that have the potential to disturb asbestos (from soil or building material) to comply with all the requirements of the California Air Resource Board's air toxics control measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.

Policy NRE-12.4 **Grading**. Require subdivision designs and site planning to minimize grading and use landform grading in hillside areas.

- Action NRE-12.A Standard Measures for Demolition and Grading. Adopt and periodically update dust, particulate matter, and exhaust control standard measures for demolition, grading, and construction activities to include on project plans mitigation measures as conditions of approval based Bay Area Air Quality Management District CEQA Guidelines. Include measures to prevent silt loading on roadways that generates particulate matter air pollution by prohibiting unpaved or unprotected access to public roadways from construction sites.
- Action NRE-12.B Grading Ordinance. Revise the grading ordinance and condition grading permits to require that graded areas be stabilized from the completion of grading to commencement and construction.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, infants and children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children.

The closest sensitive receptors to the project site are the residents in the single-family homes to the west bordering Old Monterey Road and multi-family residences to the north along Jarvis Drive. Apartments are being constructed immediately north of the project site but are not anticipated to be occupied during the brief construction period for this project.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 *CEQA Air Quality Guidelines*. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the *CEQA Air Quality Guidelines* in 2017 to include the latest significance thresholds that were used in this analysis are summarized in Table 1.

Table 1. BAAQMD Air Quality and GHG Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1,000-foot zone of influence)**	
Excess Cancer Risk	10 per one million	100 per one million	
Hazard Index	>1.0	10.0	
Incremental annual $PM_{2.5}$	0.3 $\mu g/m^3$	0.8 $\mu g/m^3$	
Greenhouse Gas Emissions	**Construction Thresholds**	**Operational Thresholds**	
Land Use Projects – direct and indirect emissions	None	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020) *	

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.

*BAAQMD does not have a recommended post-2020 GHG threshold.

CONSTRUCTION PERIOD EMISSIONS

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB EMission FACtors 2017 (EMFAC2017) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[7] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2017 vehicle emissions modeling outputs are included in *Attachment 3*.

<u>CalEEMod Inputs</u>

[7] See CARB's EMFAC2017 Web Database at https://www.arb.ca.gov/emfac/2017/

Land Use Inputs

The proposed project land uses were entered into CalEEMod as described in Table 2.

Table 1. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
User Defined Industrial	8.05	User Defined Unit	350,358	8.05

CalEEMod computes annual emissions for construction that are based on the project type, size and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario, including equipment list and schedule, were based on construction information provided by the project applicant.

The CalEEMod construction equipment worksheet provided for this project included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was provided. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be July 2021 and the project would be built out over a period of approximately two and a half months, or 53 construction workdays.

Construction Truck Traffic Emissions

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2014 motor vehicle emission factor model. This model has been superseded by the EMFAC2017 model; however, CalEEMod has not been updated to include EMFAC2017. Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition were estimated from the provided demolition volumes by assuming each truck could carry 10 tons per load. The number of concrete and asphalt total round haul trips were provided for the project and converted to total one-way trips, assuming two trips per round-trip delivery.

The construction traffic information was combined with EMFAC2017 motor vehicle emissions factors. EMFAC2017 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks

(EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips, and 10 miles for hauling (demolition material export and soil import/export). Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On-road emission rates in Santa Clara County for the year 2022 were used. Table 3 provides the traffic inputs that were combined with the EMFAC2017 emission factors to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2017 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	71.5% LDA 6.4% LDT1 22.1% LDT2	38.1% MHDT 61.9% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	10.0 (Demo/Soil/Cement/Asphalt)	CalEEMod default distance with 5-min truck idle time.
Demolition	24	-	10	CalEEMod default worker and hauling trips.
Site Preparation	30	-	-	CalEEMod default worker trips.
Grading	429	-	13,431	50,581-cy export volume. CalEEMod default worker trips.
Building Construction	1617	627	-	CalEEMod default worker and vendor trips.
Notes: [1] Based on 2021 EMFAC2017 light-duty vehicle fleet mix for Santa Clara County. [2] Includes grading trips estimated by CalEEMod based on amount of material to be removed.				

Summary of Computed Construction Period Emissions

CalEEMod provided total construction emissions. Average daily emissions were computed by dividing the total construction emissions by the number of active workdays during that year. Table 4 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 2, predicted construction period emissions would not exceed the BAAQMD significance thresholds.

Table 4. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions Per Year (Tons)				
Project construction and hauling in 2021	0.04	0.47	0.02	0.01
Annualized Daily Construction Emissions (pounds/day)				
Average daily emissions	0.31	3.65	0.13	0.11
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Mitigation Measure AQ-1 would implement BAAQMD-recommended best management practices*.

Mitigation Measure AQ-1: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. 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.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

CONSTRUCITON HEALTH RISK IMPACTS AND MITIGATION MEASURES

Temporary project construction activity would generate dust and equipment exhaust that would affect nearby sensitive receptors. Truck traffic associated with soil export would affect sensitive receptors along potential truck haul routes that include Monterey Highway, Butterfield Drive and Cochrane Road. Community risk impacts were addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations and computing the Hazard Index (HI) for non-cancer health risks. The methodology for computing community risks impacts is contained in *Attachment 1*.

Construction Emissions

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. The primary community risk impact issue associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[8] This assessment included emissions estimation and dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

The CalEEMod model was used to predict on- and near-site emissions of total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages reported in Table 8 on an annual basis. The on-road emissions that are included result from haul truck travel during demolition and grading activities, worker travel, and vendor deliveries during construction. A trip length of one mile was used to represent vehicle travel while at or near the construction site to represent localized air emissions from construction. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction sites. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod for the overall construction period and are included as part of the $PM_{2.5}$ emissions.

The Ct-Emfac2017 model was used to compute haul truck emissions rates for off-site travel. The Truck 1 class (heavy-duty trucks) were used in this model along with a travel speed of 25 mph.

[8] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

Off-site travel emissions were estimated for 25 mph speeds on Monterey Road, Butterfield Avenue and Cochrane Road. Emissions estimates were based on rates generated by the Caltrans version of the EMFAC2017 model, known as CT-EMFAC. The model was run for Santa Clara county assuming 100% Truck category 1. CT-EMFAC provides emission rates for mobile source air toxics (MSATs) that include diesel particulate matter.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project site from construction and operation activities. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[9]

Construction Sources

Emission from construction activities in the industrial, commercial, and residential areas were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions. For each of the construction areas modeled, the modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area sources. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area sources. Emissions from the construction equipment and on-road construction vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. to 5 p.m., when most of the construction activity would occur.

Truck Traffic Sources

Off-site truck travel was modeled with the AERMOD model using line-volume sources representing the expected truck travel routes (see Figure 2). Haul Route 2 was split into northbound and southbound routes to accommodate the entry and exit paths of the hauling trucks. This was not possible for Haul Route 1 as entry to Jarvis Drive from Monterey Road is blocked by a median. Therefore, Haul Route 1 was treated as an “exit” route only.

Meteorological Data

The modeling used a five-year data set (2013 - 2017) of hourly meteorological data from San Martin Airport prepared for use with the AERMOD model by the BAAQMD. The airport is about 5 miles southeast of the project site. Annual DPM and $PM_{2.5}$ concentrations from construction, and operation were computed using the model.

Receptors

[9] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May. Note AERMOD is the preferred model.

Receptors for this assessment included locations of sensitive receptors. These include residences to the west and north. DPM and $PM_{2.5}$ concentrations were calculated at sensitive receptor breathing heights of 1.5 meters (4.9 feet) to represent the breathing heights of the residents in nearby homes. Residential receptors are assumed to include all receptor types with almost continuous exposure to construction activity. Figure 1 also shows locations of modeled emission sources and receptors, including those receptors that would be most affected by the project TAC and $PM_{2.5}$ emissions.

Cancer Risk and $PM_{2.5}$ Impacts

The vast majority of TACs emitted from the project that would contribute to increased cancer risk would be DPM. Increased cancer risks from the Defined Industrial Project and Master Plan emission sources were calculated using the modeled maximum annual DPM concentrations and BAAQMD recommended risk assessment methods and parameters described in *Attachment 2*. These methods evaluate cancer risk due to DPM exposure and incorporate age sensitivity factors methods for infant (third trimester to two years of age) and children (two years of age to 16 years). The sensitive receptor identified with the maximum increased cancer risk caused by the Master Plan is referred to as the Maximumly Exposed Individual (MEI). Note that a variety of receptor types (i.e., ages and exposure periods) are tested to identify the maximum cancer risk. All other receptors would have lesser impacts with respect to increase cancer risk caused by the project. The $PM_{2.5}$ concentration and non-cancerous (i.e. Hazard Index) health risk impacts were also calculated. These results are based on the maximum annual concentration during any year that the Master Plan is constructed or operates.

Table 5 reports the community risk impacts in terms of MEI for cancer risk, maximum annual $PM_{2.5}$ concentration and maximum annual Hazard Index for the Defined Industrial Project. The MEI and maximum affected receptors are shown in Figure 1. *Attachment 3* includes the Construction health risk assessment assumptions and computations.

Combined Impact of All TAC Sources on the Off-Site Project MEI

Project contributions to overall community risk impacts are below the single-source thresholds. Few cumulative sources, besides the project, are near the project and sensitive receptors. According to BAAQMD, a project will only have a cumulative considerable contribution if the project exceeds the single source threshold[10]. In addition, nearby sources within 1,000 feet of the project site are not expected to cause community risk levels to exceed the cumulative thresholds.

[10] BAAQMD. 2021. Email between Areana Flores of BAAQMD and Casey Divine of Illingworth & Rodkin, Inc. on Feb. 23, 2021.

Figure 1. Project Sites, Emission Sources, Locations of Off-Site Sensitive Receptors, and MEI Locations

Table 5. Project Community Risk Impacts

Source	Cancer Risk at MEI (per million) [1]	Maximum Annual	
		$PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Construction (year 2021)	0.60	0.01	<0.01
Truck Trips Haul Route 1 (year 2021)	0.09	<0.01	<0.01
Truck Trips Haul Route 2 (year 2021)	0.10	<0.01	<0.01
Total	0.79[1]	0.01[2]	<0.01[2]
BAAQMD Single-Source Threshold	***>10.0***	***>0.3***	***>1.0***
Exceed Threshold?	*No*	*No*	*No*

1 For cancer risk, at receptor with combined maximum risk, assuming third trimester/infant exposure begins with construction.

2 Maximum annual level for any year of construction or operation

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction air pollutant and TAC emissions. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2017 construction traffic emissions.

Attachment 4 is the construction health risk assessment. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[11] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[12] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[13] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[11] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[12] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[13] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^{6}$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	***Exposure Type →***	**Infant**		**Child**		**Adult**
	Age Range →	**3rd Trimester**	**0<2**	**2 < 9**	**2 < 16**	**16 - 30**
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	631	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	861	745	335
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Modeling Output and Supporting Information

Air Quality/Noise Construction Information Data Request

Project Name: **Fisher Basin Expansion Project**

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size	0	Dwelling Units	8.05 total project acres disturbed
	0	s.f. residential	
	0	s.f. retail	
	0	s.f. office/commercial	
	0	s.f. other, specify:	
	0	s.f. parking garage	spaces
	0	s.f. parking lot	spaces
Construction Hours	7:00 am	to	5:00 pm

Pile Driving - No

Project include OPERATIONAL GENERATOR OR FIRE PUMP on-site? No

IF YES (if BOTH separate values) --No

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available): see attached (APN: 726-25-028)

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Annual Hours	Comments
	Demolition	Start Date:	7/5/2021	Total phase:	3			Overall Import/Export Volumes
		End Date:	7/7/2021					
1	Concrete/Industrial Saws			8	1	2.67	8	Demolition Volume
1	Excavators			8	1	2.67	8	
	Rubber-Tired Dozers							
1	Tractors/Loaders/Backhoes			8	1	2.67	8	
	Site Preparation	Start Date:	7/8/2021	Total phase:	5			
		End Date:	7/15/2021					
	Graders			0	0			
1	Rubber Tired Dozers			8	3	4.80	24	
1	Tractors/Loaders/Backhoes			8	2	3.20	16	
	Grading / Excavation	Start Date:	7/16/2021	Total phase:	33			
		End Date:	8/31/2021					Soil Hauling Volume
1	Excavators			8	15	3.64	120	Export volume = 50581 cubic yards
1	Graders			8	10	2.42	80	Import volume = 0 cubic yards
1	Rubber Tired Dozers			8	15	3.64	120	
1	Concrete/Industrial Saws			8	3	0.73	24	ASSUME 12CY TRUCK LOADS = 8,430 TOTAL HAUL TRUCK TRIPS
1	Tractors/Loaders/Backhoes			8	25	6.06	200	
	Trenching/Foundation	Start Date:	n/a	Total phase:	n/a			
		End Date:	n/a					
	Tractor/Loader/Backhoe			n/a				
	Excavators			n/a				
	Drill Rigs			n/a				
	Cement and Mortar Mixers			n/a				
	Cement and Mortar Mixers			n/a				
	Other Construction Equipment			n/a				
	Pumps			n/a				
	Concrete/Industrial Saws							
	Building - Exterior	Start Date:	9/1/2021	Total phase:	10			
		End Date:	9/15/2021					
	Cranes			n/a	n/a			
	Forklifts			n/a	n/a			
	Generator Sets			n/a	n/a			
	Cement and Mortar Mixers			n/a	n/a			
	Cement and Mortar Mixers			n/a	n/a			
	Dumpsters/Tenders			n/a	n/a			
	Pumps			n/a	n/a			
	Other Construction Equipment			n/a	n/a			
1	Tractors/Loaders/Backhoes			8	10	8.00	80	
	Welders			n/a	n/a			
Building - Interior/Architectural Coating		Start Date:	n/a	Total phase:	n/a			
		End Date:	n/a					
	Air Compressors			n/a	n/a			
	Other Construction Equipment			n/a	n/a			
	Aerial Lift			n/a	n/a			
	Paving	Start Date:	n/a	Total phase:	n/a			
		Start Date:	n/a					
	Cement and Mortar Mixers			n/a	n/a			
	Paving Equipment			n/a	n/a			
	Rollers			n/a	n/a			
	Pressure washers			n/a	n/a			
	Tractors/Loaders/Backhoes			n/a	n/a			

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

Complete one sheet for each project component

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

20-109 Fisher Detention Basin

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	8.05	User Defined Unit	8.05	350,658.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	3			**Operational Year**	2023
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - User Defined Industrial land use subtype chosen since no water basin subtype available

Construction Phase - Phase dates provided by client

Off-road Equipment -

Off-road Equipment - Construction equipment and hours provided by client

Off-road Equipment - Construction equipment and hours provided by client

Off-road Equipment - Construction equipment and hours provided by client

Off-road Equipment - Construction equipment and hours provided by client

Grading -

Demolition - Square footage estimated via Google Earth. Assumed existing storm drains and rip rap would need to be demolished.

Trips and VMT - Trips entered into EMFAC spreadsheet

Construction Off-road Equipment Mitigation - All equipment assumed to be t4i

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstructionPhase	NumDays	230.00	11.00
tblConstructionPhase	NumDays	20.00	3.00
tblConstructionPhase	NumDays	20.00	33.00
tblConstructionPhase	NumDays	10.00	6.00
tblConstructionPhase	PhaseEndDate	7/4/2021	9/15/2021
tblConstructionPhase	PhaseEndDate	7/4/2021	7/7/2021
tblConstructionPhase	PhaseEndDate	7/4/2021	8/31/2021
tblConstructionPhase	PhaseEndDate	7/4/2021	7/15/2021
tblConstructionPhase	PhaseStartDate	7/5/2021	9/1/2021
tblConstructionPhase	PhaseStartDate	7/5/2021	7/16/2021
tblConstructionPhase	PhaseStartDate	7/5/2021	7/8/2021
tblGrading	MaterialExported	0.00	50,581.00
tblGrading	MaterialSiltContent	6.90	4.30
tblGrading	MeanVehicleSpeed	7.10	40.00
tblLandUse	BuildingSpaceSquareFeet	0.00	350,658.00
tblLandUse	LandUseSquareFeet	0.00	350,658.00
tblLandUse	LotAcreage	0.00	8.05
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	8.00	2.67
tblOffRoadEquipment	UsageHours	8.00	2.67
tblOffRoadEquipment	UsageHours	8.00	3.64
tblOffRoadEquipment	UsageHours	8.00	3.64
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	2.42
tblOffRoadEquipment	UsageHours	8.00	6.06
tblOffRoadEquipment	UsageHours	8.00	3.20
tblOffRoadEquipment	UsageHours	8.00	4.80
tblProjectCharacteristics	OperationalYear	2018	2023
tblTripsAndVMT	HaulingTripNumber	10.00	0.00
tblTripsAndVMT	HaulingTripNumber	5,001.00	0.00
tblTripsAndVMT	VendorTripNumber	57.00	0.00
tblTripsAndVMT	WorkerTripNumber	147.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

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

Year	tons/yr										MT/yr					
2021	0.0292	0.2938	0.1951	3.6000e-004	0.1204	0.0145	0.1349	0.0421	0.0135	0.0556	0.0000	31.0314	31.0314	8.7000e-003	0.0000	31.2490
Maximum	**0.0292**	**0.2938**	**0.1951**	**3.6000e-004**	**0.1204**	**0.0145**	**0.1349**	**0.0421**	**0.0135**	**0.0556**	**0.0000**	**31.0314**	**31.0314**	**8.7000e-003**	**0.0000**	**31.2490**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0292	0.2938	0.1951	3.6000e-004	0.0542	0.0145	0.0687	0.0189	0.0135	0.0324	0.0000	31.0314	31.0314	8.7000e-003	0.0000	31.2489
Maximum	**0.0292**	**0.2938**	**0.1951**	**3.6000e-004**	**0.0542**	**0.0145**	**0.0687**	**0.0189**	**0.0135**	**0.0324**	**0.0000**	**31.0314**	**31.0314**	**8.7000e-003**	**0.0000**	**31.2489**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**55.00**	**0.00**	**49.07**	**55.01**	**0.00**	**41.63**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	**Start Date**	**End Date**	**Maximum Unmitigated ROG + NOX (tons/quarter)**	**Maximum Mitigated ROG + NOX (tons/quarter)**
1	**7-5-2021**	**9-30-2021**	0.3111	0.3111
		Highest	0.3111	0.3111

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.5524	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5524**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.5524	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5524**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	9/1/2021	9/15/2021	5	11	
2	Demolition	Demolition	7/5/2021	7/7/2021	5	3	
3	Grading	Grading	7/16/2021	8/31/2021	5	33	
4	Site Preparation	Site Preparation	7/8/2021	7/15/2021	5	6	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4.99

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	1	0.73	81	0.73
Demolition	Excavators	1	2.67	158	0.38
Demolition	Concrete/Industrial Saws	1	2.67	81	0.73
Grading	Excavators	1	3.64	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45
Demolition	Tractors/Loaders/Backhoes	1	2.67	97	0.37
Grading	Rubber Tired Dozers	1	3.64	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	2.42	187	0.41

Grading	Tractors/Loaders/Backhoes	1	6.06	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	3.20	97	0.37
Site Preparation	Rubber Tired Dozers	1	4.80	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7800e-003	0.0789	0.0710	1.2000e-004		4.2700e-003	4.2700e-003		4.0400e-003	4.0400e-003	0.0000	10.3004	10.3004	2.2800e-003	0.0000	10.3575
Total	**8.7800e-003**	**0.0789**	**0.0710**	**1.2000e-004**		**4.2700e-003**	**4.2700e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**10.3004**	**10.3004**	**2.2800e-003**	**0.0000**	**10.3575**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7800e-003	0.0789	0.0710	1.2000e-004		4.2700e-003	4.2700e-003		4.0400e-003	4.0400e-003	0.0000	10.3004	10.3004	2.2800e-003	0.0000	10.3575
Total	**8.7800e-003**	**0.0789**	**0.0710**	**1.2000e-004**		**4.2700e-003**	**4.2700e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**10.3004**	**10.3004**	**2.2800e-003**	**0.0000**	**10.3575**

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0800e-003	0.0000	1.0800e-003	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5400e-003	0.0365	0.0167	3.0000e-005		1.7900e-003	1.7900e-003		1.6600e-003	1.6600e-003	0.0000	2.8841	2.8841	8.6000e-004	0.0000	2.9057
Total	**3.5400e-003**	**0.0365**	**0.0167**	**3.0000e-005**	**1.0800e-003**	**1.7900e-003**	**2.8700e-003**	**1.6000e-004**	**1.6600e-003**	**1.8200e-003**	**0.0000**	**2.8841**	**2.8841**	**8.6000e-004**	**0.0000**	**2.9057**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.9000e-004	0.0000	4.9000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5400e-003	0.0365	0.0167	3.0000e-005		1.7900e-003	1.7900e-003		1.6600e-003	1.6600e-003	0.0000	2.8841	2.8841	8.6000e-004	0.0000	2.9057
Total	**3.5400e-003**	**0.0365**	**0.0167**	**3.0000e-005**	**4.9000e-004**	**1.7900e-003**	**2.2800e-003**	**7.0000e-005**	**1.6600e-003**	**1.7300e-003**	**0.0000**	**2.8841**	**2.8841**	**8.6000e-004**	**0.0000**	**2.9057**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1085	0.0000	0.1085	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0148	0.1564	0.0975	1.8000e-004		7.3800e-003	7.3800e-003		6.8100e-003	6.8100e-003	0.0000	16.1683	16.1683	5.0100e-003	0.0000	16.2937
Total	**0.0148**	**0.1564**	**0.0975**	**1.8000e-004**	**0.1085**	**7.3800e-003**	**0.1159**	**0.0360**	**6.8100e-003**	**0.0428**	**0.0000**	**16.1683**	**16.1683**	**5.0100e-003**	**0.0000**	**16.2937**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.0488	0.0000	0.0488	0.0162	0.0000	0.0162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0148	0.1564	0.0975	1.8000e-004		7.3800e-003	7.3800e-003		6.8100e-003	6.8100e-003	0.0000	16.1683	16.1683	5.0100e-003	0.0000	16.2937
Total	**0.0148**	**0.1564**	**0.0975**	**1.8000e-004**	**0.0488**	**7.3800e-003**	**0.0562**	**0.0162**	**6.8100e-003**	**0.0230**	**0.0000**	**16.1683**	**16.1683**	**5.0100e-003**	**0.0000**	**16.2937**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0108	0.0000	0.0108	5.9600e-003	0.0000	5.9600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1100e-003	0.0220	9.9800e-003	2.0000e-005		1.0900e-003	1.0900e-003		1.0100e-003	1.0100e-003	0.0000	1.6786	1.6786	5.4000e-004	0.0000	1.6922

Total	**2.1100e-003**	**0.0220**	**9.9800e-003**	**2.0000e-005**	**0.0108**	**1.0900e-003**	**0.0119**	**5.9600e-003**	**1.0100e-003**	**6.9700e-003**	**0.0000**	**1.6786**	**1.6786**	**5.4000e-004**	**0.0000**	**1.6922**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.8800e-003	0.0000	4.8800e-003	2.6800e-003	0.0000	2.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1100e-003	0.0220	9.9800e-003	2.0000e-005		1.0900e-003	1.0900e-003		1.0100e-003	1.0100e-003	0.0000	1.6786	1.6786	5.4000e-004	0.0000	1.6922
Total	**2.1100e-003**	**0.0220**	**9.9800e-003**	**2.0000e-005**	**4.8800e-003**	**1.0900e-003**	**5.9700e-003**	**2.6800e-003**	**1.0100e-003**	**3.6900e-003**	**0.0000**	**1.6786**	**1.6786**	**5.4000e-004**	**0.0000**	**1.6922**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.5524	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Unmitigated	1.5524	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1829					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3695					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**1.5524**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1829					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3695					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	7.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.4000e-004	1.4000e-004	0.0000	0.0000	1.5000e-004
Total	**1.5524**	**0.0000**	**7.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.4000e-004**	**1.4000e-004**	**0.0000**	**0.0000**	**1.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000

Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

Attachment 3: EMFAC2017 Calculations

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	8	0	24	0	10	10.8	7.3	10	LD_Mix	HDT_Mix	HHDT	259.2	0	100
Site Preparation	5	0	30	0	0	10.8	7.3	10	LD_Mix	HDT_Mix	HHDT	324	0	0
Grading	13	0	429	0	13431	10.8	7.3	10	LD_Mix	HDT_Mix	HHDT	4633.2	0	134310
Building Construction	147	57	1617	627	0	10.8	7.3	10	LD_Mix	HDT_Mix	HHDT	17463.6	4577.1	0

Number of Days Per Year					
2021	7/5/21	9/15/21	73	**53**	
			75	**53**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	7/5/2021	7/7/2021	5	3
Site Preparation	7/8/2021	7/15/2021	5	6
Grading	7/16/2021	8/31/2021	5	33
Building Construction	9/1/2021	9/15/2021	5	11

Summary of Construction Traffic Emissions (EMFAC2017)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2
					Tons						*Metric Tons*
Criteria Pollutants											
2021	0.0295	0.7302	0.2089	0.0023	0.0519	0.0248	0.0766	0.0078	0.0145	0.0223	230.2351
Toxic Air Contaminants (1 Mile Trip Length)											
2021	0.0105	0.1790	0.1015	0.0004	0.0052	0.0026	0.0078	0.0008	0.0016	0.0024	36.5268

Source: EMFAC2017 (v1.0.3) Emission Rates
Region Type: County
Region: Santa Clara
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX, RESTLOSS and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips	NOx_RUNE	NOx_IDLE	NOx_STRE	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PMB	PM2.5_PMT	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PMB	PM10_PMT	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNE	N2O_IDLEX	N2O_STRE	ROG_RUNE	ROG_IDLEX	ROG_STRE	ROG_HOTS	ROG_RUNL	ROG_REST	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL	TOG_REST	TOG_DIUR	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
Santa Clara	2021	HHDT	Aggregate	Aggregate	Gasoline	5.162845	484.6824	103.2982	4.062598	0	0.407731	0.001311	0	0.000823	0.005	0.02646	0.001426	0	0.000895	0.02	0.06174	2025.269	0	47.29512	0.112325	0	0.000414	0.149526	0	0.012575	0.585782	0	0.002169	0.156953	0.96912	0.038977	0.070674	0.854771	0	0.002374	0.156953	0.96912	0.038977	0.070674	32.05552	0	5.02137	0.020042	0	0.000468
Santa Clara	2021	HHDT	Aggregate	Aggregate	Diesel	8105.749	988266.7	86260.08	4.147844	63.6365	1.887942	0.058758	0.087222	0	0.008868	0.026073	0.061415	0.091165	0	0.035473	0.060837	1528.481	11606.57	0	0.006422	0.218177	0	0.240256	1.824391	0	0.138263	4.697294	0	0	0	0	0	0.157402	5.347512	0	0	0	0	0	0.5229	60.00634	0	0.01444	0.109653	0
Santa Clara	2021	HHDT	Aggregate	Aggregate	Natural Ga	336.2009	13706.54	1311.183	1.939434	21.5699	0	0.005088	0.034407	0	0.009	0.02646	0.005318	0.035962	0	0.036	0.06174	3233.282	4101.533	0	3.57235	1.261083	0	0.659126	0.836124	0	0.176593	0.0496	0	0	0	0	0	3.788896	1.323011	0	0	0	0	0	10.63714	21.51231	0	0	0	0
Santa Clara	2021	LDA	Aggregate	Aggregate	Gasoline	715693.3	26189161	3369392	0.044609	0	0.21159	0.001358	0	0.001822	0.002	0.01575	0.001477	0	0.001981	0.008	0.03675	266.3197	0	56.92202	0.002711	0	0.058853	0.004863	0	0.027764	0.010662	0	0.269366	0.108645	0.230465	0.191774	0.221801	0.015551	0	0.294921	0.108645	0.230465	0.191774	0.221801	0.690036	0	2.392069	0.002635	0	0.000563
Santa Clara	2021	LDA	Aggregate	Aggregate	Diesel	6670.999	255156.4	31695.34	0.087271	0	0	0.007648	0	0	0.002	0.01575	0.007994	0	0	0.008	0.03675	205.4073	0	0	0.000708	0	0	0.032287	0	0	0.015244	0	0	0	0	0	0	0.017354	0	0	0	0	0	0	0.210705	0	0	0.001942	0	0
Santa Clara	2021	LDA	Aggregate	Aggregate	Electricity	24022.27	869835.7	117842.5	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LDT1	Aggregate	Aggregate	Gasoline	71628.15	2413668	331256	0.105802	0	0.272111	0.001862	0	0.002385	0.002	0.01575	0.002025	0	0.002594	0.008	0.03675	308.1227	0	66.19689	0.005661	0	0.076866	0.008066	0	0.03002	0.024911	0	0.384911	0.189186	0.681609	0.358705	0.461608	0.036311	0	0.421425	0.189186	0.681609	0.358705	0.461608	1.200263	0	2.537143	0.003049	0	0.000655
Santa Clara	2021	LDT1	Aggregate	Aggregate	Diesel	39.89374	725.5582	131.2284	1.268412	0	0	0.168474	0	0	0.002	0.01575	0.176091	0	0	0.008	0.03675	413.9966	0	0	0.010139	0	0	0.065074	0	0	0.218297	0	0	0	0	0	0	0.248517	0	0	0	0	0	0	1.237222	0	0	0.003914	0	0
Santa Clara	2021	LDT1	Aggregate	Aggregate	Electricity	483.8807	18039.76	2391.303	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LDT2	Aggregate	Aggregate	Gasoline	246759.9	8311704	1150425	0.087782	0	0.326789	0.001356	0	0.001737	0.002	0.01575	0.001475	0	0.001889	0.008	0.03675	338.518	0	73.70907	0.004072	0	0.077467	0.007118	0	0.035187	0.01674	0	0.36702	0.133338	0.446757	0.285742	0.307995	0.024414	0	0.40184	0.133338	0.446757	0.285742	0.307995	0.930639	0	3.014399	0.00335	0	0.000729
Santa Clara	2021	LDT2	Aggregate	Aggregate	Diesel	1518.218	59025.65	7458.416	0.041668	0	0	0.004904	0	0	0.002	0.01575	0.005126	0	0	0.008	0.03675	282.8504	0	0	0.000657	0	0	0.04446	0	0	0.01415	0	0	0	0	0	0	0.016109	0	0	0	0	0	0	0.12212	0	0	0.002674	0	0
Santa Clara	2021	LDT2	Aggregate	Aggregate	Electricity	2166.546	67548.49	10876.24	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0	0	0
Santa Clara	2021	LHDT1	Aggregate	Aggregate	Gasoline	16540.61	571642.7	246430.4	0.262338	0.03949	0.549198	0.002191	0	0.000401	0.002	0.03276	0.002383	0	0.000436	0.008	0.07644	1017.255	122.0379	19.14342	0.012124	0.123606	0.02716	0.015765	0.003154	0.042297	0.059375	0.45228	0.137987	0.130258	0.89758	0.02599	0.052227	0.08664	0.659966	0.151079	0.130258	0.89758	0.02599	0.052227	1.086844	3.748723	1.811769	0.010067	0.001208	0.000189
Santa Clara	2021	LHDT1	Aggregate	Aggregate	Diesel	10609.08	409397.3	133448.8	1.862203	2.152154	0	0.023297	0.02704	0	0.003	0.03276	0.02435	0.028263	0	0.012	0.07644	552.5074	134.745	0	0.007585	0.005098	0	0.086846	0.02118	0	0.163311	0.10976	0	0	0	0	0	0.185919	0.124954	0	0	0	0	0	0.686231	0.909745	0	0.005223	0.001274	0
Santa Clara	2021	LHDT2	Aggregate	Aggregate	Gasoline	2219.575	77018.29	33068.36	0.272207	0.039035	0.535592	0.002122	0	0.00036	0.002	0.03822	0.002307	0	0.000392	0.008	0.08918	1160.22	140.2323	21.7453	0.010038	0.122897	0.026292	0.016913	0.003077	0.040901	0.045762	0.447168	0.133103	0.127611	0.884759	0.023996	0.048928	0.066776	0.652507	0.145731	0.127611	0.884759	0.023996	0.048928	0.835401	3.750559	1.839341	0.011481	0.001388	0.000215
Santa Clara	2021	LHDT2	Aggregate	Aggregate	Diesel	4214.571	160661.6	53014	1.542154	2.158821	0	0.022944	0.027219	0	0.003	0.03822	0.023981	0.02845	0	0.012	0.08918	621.5562	215.9968	0	0.007204	0.005098	0	0.0977	0.033952	0	0.155094	0.10976	0	0	0	0	0	0.176564	0.124954	0	0	0	0	0	0.650931	0.909745	0	0.005876	0.002042	0
Santa Clara	2021	MCY	Aggregate	Aggregate	Gasoline	32119.63	239436.8	64239.26	1.15497	0	0.270443	0.001772	0	0.00303	0.001	0.00504	0.001893	0	0.003213	0.004	0.01176	210.3906	0	61.75755	0.33122	0	0.25818	0.066438	0	0.015338	2.253066	0	1.967635	0.716612	2.132348	1.002545	1.822873	2.774349	0	2.14098	0.716612	2.132348	1.002545	1.822873	19.56337	0	8.976601	0.002082	0	0.000611
Santa Clara	2021	MDV	Aggregate	Aggregate	Gasoline	14954.29	4865312	690430.3	0.11839	0	0.410054	0.001476	0	0.002019	0.002	0.01575	0.001604	0	0.002194	0.008	0.03675	409.4409	0	89.81723	0.005494	0	0.095775	0.008922	0	0.03884	0.024634	0	0.48393	0.15482	0.49034	0.340146	0.361645	0.034949	0	0.529797	0.15482	0.49034	0.340146	0.361645	1.127252	0	3.59329	0.004052	0	0.000889
Santa Clara	2021	MDV	Aggregate	Aggregate	Diesel	3426.389	128242	16726.03	0.044109	0	0	0.004602	0	0	0.002	0.01575	0.00481	0	0	0.008	0.03675	370.3019	0	0	0.000514	0	0	0.058206	0	0	0.011068	0	0	0	0	0	0	0.0126	0	0	0	0	0	0	0.188966	0	0	0.003501	0	0
Santa Clara	2021	MDV	Aggregate	Aggregate	Electricity	687.5446	22639.78	3509.471	0	0	0	0	0	0	0.002	0.01575	0	0	0	0.008	0.03675	0	0	0	0	0	0	0	0	0	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0.004888	0	0.004456	0.017501	0	0	0	0	0	0
Santa Clara	2021	MH	Aggregate	Aggregate	Gasoline	2931.22	26379	293.2393	0.474084	0	0.332292	0.001724	0	0.000381	0.003	0.05586	0.001875	0	0.000414	0.012	0.13034	1782.907	0	26.40751	0.017557	0	0.033119	0.028008	0	0.03399	0.078746	0	0.143103	0.096257	2.347589	0.039223	0.115979	0.114906	0	0.15668	0.096257	2.347589	0.039223	0.115979	2.065959	0	3.165436	0.017643	0	0.000261
Santa Clara	2021	MH	Aggregate	Aggregate	Diesel	984.446	9504.941	98.4446	4.382014	0	0	0.092722	0	0	0.004	0.05586	0.096914	0	0	0.016	0.13034	1031.304	0	0	0.005198	0	0	0.162107	0	0	0.111901	0	0	0	0	0	0	0.127391	0	0	0	0	0	0	0.400207	0	0	0.00975	0	0
Santa Clara	2021	MHDT	Aggregate	Aggregate	Gasoline	1410.134	72248.39	28213.97	0.591018	0.088168	0.389628	0.001358	0	0.000497	0.003	0.05586	0.001477	0	0.00054	0.012	0.13034	1752.404	539.4334	40.1358	0.018696	0.257865	0.042095	0.027833	0.0072	0.028931	0.092815	1.007884	0.233354	0.09611	0.563096	0.020857	0.043005	0.135436	1.470848	0.255494	0.09611	0.563096	0.020857	0.043005	2.155492	15.06152	5.301778	0.017341	0.005338	0.000397
Santa Clara	2021	MHDT	Aggregate	Aggregate	Diesel	9487.148	545455.1	96101.91	3.194916	8.74953	1.398943	0.080969	0.02675	0	0.003	0.05586	0.08463	0.02796	0	0.012	0.13034	1081.992	930.4887	0	0.009431	0.005843	0	0.170074	0.14626	0	0.203046	0.125806	0	0	0	0	0	0.231153	0.143221	0	0	0	0	0	0.573058	2.609835	0	0.010222	0.008791	0
Santa Clara	2021	OBUS	Aggregate	Aggregate	Gasoline	502.2127	24696.47	10048.27	0.501682	0.065104	0.329488	0.000916	0	0.000212	0.003	0.05586	0.000996	0	0.00023	0.012	0.13034	1793.018	381.4064	26.74037	0.014791	0.200187	0.030949	0.025044	0.005583	0.026445	0.070359	0.746923	0.159737	0.026848	0.294072	0.016083	0.036997	0.102667	1.089908	0.174892	0.026848	0.294072	0.016083	0.036997	1.576822	5.778528	3.351004	0.017743	0.003774	0.000265
Santa Clara	2021	OBUS	Aggregate	Aggregate	Diesel	767.9729	54443.73	7049.223	2.779706	13.63199	1.84	0.044765	0.045778	0	0.003	0.05586	0.046789	0.047848	0	0.012	0.13034	1202.163	1945.083	0	0.005321	0.035079	0	0.188963	0.30574	0	0.114561	0.755235	0	0	0	0	0	0.130419	0.859777	0	0	0	0	0	0.397353	8.822131	0	0.011357	0.018376	0
Santa Clara	2021	SBUS	Aggregate	Aggregate	Gasoline	235.3456	11037.57	941.3825	0.448701	0.923977	0.560273	0.001205	0	0.000494	0.002	0.3192	0.001311	0	0.000537	0.008	0.7448	872.735	2601.946	49.24562	0.012804	2.443216	0.058897	0.025163	0.088108	0.05292	0.063019	10.60409	0.336056	0.060254	0.423958	0.009983	0.025	0.091957	15.47346	0.367939	0.060254	0.423958	0.009983	0.025	1.371308	82.01386	8.8054	0.008636	0.025748	0.000487
Santa Clara	2021	SBUS	Aggregate	Aggregate	Diesel	1013.214	32006.31	11692.35	6.970742	45.79682	0.74176	0.043352	0.053733	0	0.003	0.3192	0.045313	0.056163	0	0.012	0.7448	1153.149	3727.733	0	0.004763	0.013307	0	0.181259	0.585948	0	0.102551	0.286497	0	0	0	0	0	0.116746	0.326154	0	0	0	0	0	0.279558	5.707206	0	0.010894	0.035218	0
Santa Clara	2021	UBUS	Aggregate	Aggregate	Gasoline	8.415569	1059.368	33.66228	0.456042	0	1.173674	0.000327	0	9.66E-05	0.003	0.05586	0.000355	0	0.000105	0.012	0.13034	2351.957	0	104.4673	0.006811	0	0.169572	0.0345	0	0.088962	0.022728	0	0.727258	0.171351	1.189018	0.028073	0.044636	0.033164	0	0.796256	0.171351	1.189018	0.028073	0.044636	0.499495	0	8.852622	0.023275	0	0.001034
Santa Clara	2021	UBUS	Aggregate	Aggregate	Diesel	423.0651	46463.12	1692.26	0.803452	0	0	0.005651	0	0	0.008415	0.029326	0.005907	0	0	0.03366	0.068427	1481.161	0	0	0.077358	0	0	0.232818	0	0	0.001105	0	0	0	0	0	0	0.078949	0	0	0	0	0	0	0.131304	0	0	0.014002	0	0
Santa Clara	2021	UBUS	Aggregate	Aggregate	Natural Ga	103.9599	12318.22	415.8396	0.489341	0	0	0.003183	0	0	0.008475	0.029034	0.003327	0	0	0.033899	0.067745	2016.304	0	0	6.413624	0	0	0.411037	0	0	0.091638	0	0	0	0	0	0	6.545574	0	0	0	0	0	0	49.80412	0	0	0	0	0

Attachment 4: Project Construction Emissions and Health Risk Calculations

Fisher Detention Basin, Morgan Hill, CA

- Construction Health Impact Summary

Maximum Impacts at MEI Location – Without Mitigation

Emissions Year	Maximum Concentrations Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million) Infant/Child	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2021	0.0036	0.0097	0.64	0.00	0.01
Total	-	-	**0.6**	-	-
Maximum	0.0036	0.0097	-	**0.00**	**0.01**

Fisher Detention Basin, Morgan Hill, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2021	Construction	0.0171	CON_DPM	34.2	0.00937	1.18E-03	32101	3.68E-08
Total		***0.0171***		***34.2***	***0.0094***	***0.0012***		

Construction Hours

hr/day =	10	(7am - 5pm)
days/yr =	365	
hours/year =	3650	

Fisher Detention Basin, Morgan Hill, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	(lb/yr)	(lb/hr)	(g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2021	Construction	CON_FUG	0.0429	85.8	0.02351	2.96E-03	32,101	9.23E-08
Total			***0.0429***	***85.8***	***0.0235***	***0.0030***		

Construction Hours

hr/day =	10	(7am - 5pm)
days/yr =	365	
hours/year =	3650	

Fisher Detention Basin, Morgan Hill, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information						
							Modeled				Maximum		
			DPM Conc (ug/m3)				DPM Conc (ug/m3)						
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**Year**	**Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2022	0.0036	10	0.05	2022	0.0036	-	-			
1	1	0 - 1	2022	0.0036	10	0.59	2022	0.0036	1	0.01	0.0007	0.0097	0.0132
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**0.6**				**0.01**			

* Third trimester of pregnancy

Haul Route 1 Traffic Emissions and Health Risk Calculations

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 1
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions 9.6576
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_R1	Haul Route 1 Northbound	NB	1	323.9	0.20	9.7	31.7	3.4	25	13,441
N/A	N/A	SB	1	0.0	0.00	9.7	31.7	3.4	0	0
									Total	13,441

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.04823			

Emisson Factors from CT-EMFAC2017

2021 Hourly Traffic Volumes and DPM Emissions - DPM_NB_R1

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	3.62E-03	17	10.00%	1344	3.62E-03
2	0.00%	0	0.00E+00	10	10.00%	1344	3.62E-03	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	3.62E-03	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	3.62E-03	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	3.62E-03	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	3.62E-03	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	3.62E-03	23	0.00%	0	0.00E+00
8	10.00%	1344	3.62E-03	16	10.00%	1344	3.62E-03	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 1
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_R1	Haul Route 1 Northbound	NB	1	323.9	0.20	9.7	32	1.3	25	13,441
N/A	N/A	SB	1	0.0	0.00	9.7	32	1.3	0	0
									Total	13,441

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.045988			

Emisson Factors from CT-EMFAC2017

2021 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_R1

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	3.46E-03	17	10.00%	1344	3.46E-03
2	0.00%	0	0.00E+00	10	10.00%	1344	3.46E-03	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	3.46E-03	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	3.46E-03	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	3.46E-03	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	3.46E-03	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	3.46E-03	23	0.00%	0	0.00E+00
8	10.00%	1344	3.46E-03	16	10.00%	1344	3.46E-03	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 1
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_R1	Haul Route 1 Northbound	NB	1	323.9	0.20	9.7	32	1.3	25	13,441
N/A	N/A	SB	1	0.0	0.00	9.7	32	1.3	0	0
									Total	13,441

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.24055			

2021 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_R1

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	1.81E-02	17	10.00%	1344	1.81E-02
2	0.00%	0	0.00E+00	10	10.00%	1344	1.81E-02	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	1.81E-02	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	1.81E-02	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	1.81E-02	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	1.81E-02	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	1.81E-02	23	0.00%	0	0.00E+00
8	10.00%	1344	1.81E-02	16	10.00%	1344	1.81E-02	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 1
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_R1	Haul Route 1 Northbound	NB	1	323.9	0.20	9.7	32	1.3	25	13,441
N/A	N/A	SB	1	0.0	0.00	9.7	32	1.3	0	0
									Total	13,441

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle per Hour (g/hour)	0.21792			
Emissions per Vehicle per Mile (g/VMT)	0.00872			

2021 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_R1

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	6.55E-04	17	10.00%	1344	6.55E-04
2	0.00%	0	0.00E+00	10	10.00%	1344	6.55E-04	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	6.55E-04	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	6.55E-04	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	6.55E-04	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	6.55E-04	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	6.55E-04	23	0.00%	0	0.00E+00
8	10.00%	1344	6.55E-04	16	10.00%	1344	6.55E-04	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 1
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_R1	Haul Route 1 Northbound	NB	1	323.9	0.20	9.7	32	1.3	25	13,441
N/A	N/A	SB	1	0.0	0.00	9.7	32	1.3	0	0
									Total	13,441

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00669			
Brake Wear - Emissions per Vehicle (g/VMT)	0.03777			
Road Dust - Emissions per Vehicle (g/VMT)	0.12491			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.16937			

2021 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_R1

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	1.27E-02	17	10.00%	1344	1.27E-02
2	0.00%	0	0.00E+00	10	10.00%	1344	1.27E-02	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	1.27E-02	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	1.27E-02	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	1.27E-02	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	1.27E-02	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	1.27E-02	23	0.00%	0	0.00E+00
8	10.00%	1344	1.27E-02	16	10.00%	1344	1.27E-02	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Haul Route 1 Truck Trips - DPM & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2021
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions	
BAQMD Moffett Airfield Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0001	0.0007	0.0000

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0006	0.0005	0.0001

Fisher Detention Basin, Morgan Hill, CA - Haul Route 1 Truck Trip Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age --> / Parameter	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0001	0.0007	0.0000	0.002	0.000	0.0000	0.00
1	1	0 - 1	2021	10	0.0001	0.0007	0.0000	0.020	0.001	0.0000	0.02
2	1	1 - 2	2022	10	0.0001	0.0007	0.0000	0.020	0.001	0.0000	0.02
3	1	2 - 3	2023	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
4	1	3 - 4	2024	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
5	1	4 - 5	2025	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
6	1	5 - 6	2026	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
7	1	6 - 7	2027	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
8	1	7 - 8	2028	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
9	1	8 - 9	2029	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
10	1	9 - 10	2030	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
11	1	10 - 11	2031	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
12	1	11 - 12	2032	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
13	1	12 - 13	2033	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
14	1	13 - 14	2034	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
15	1	14 - 15	2035	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
16	1	15 - 16	2036	3	0.0001	0.0007	0.0000	0.003	0.000	0.0000	0.00
17	1	16-17	2037	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
18	1	17-18	2038	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
19	1	18-19	2039	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
20	1	19-20	2040	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
21	1	20-21	2041	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
22	1	21-22	2042	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
23	1	22-23	2043	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
24	1	23-24	2044	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
25	1	24-25	2045	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
26	1	25-26	2046	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
27	1	26-27	2047	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
28	1	27-28	2048	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
29	1	28-29	2049	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
30	1	29-30	2050	1	0.0001	0.0007	0.0000	0.000	0.000	0.0000	0.00
Total Increased Cancer Risk								0.09	0.003	0.000	**0.09**

Maximum Hazard Index	Maximum Fugitive PM2.5	Maximum Total PM2.5
0.0000	0.00	0.00

* Third trimester of pregnancy

Haul Route 2 Traffic Emissions and Health Risk Calculations

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 2
DPM Modeling - Roadway Links, Traffic Volumes, and DPM Emissions 9.6576
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
DPM_NB_R2	Haul Route 2 Northbound	NB	1	410.5	0.26	9.7	31.7	3.4	25	13,441
DPM_SB_R2	Haul Route 2 Southbound	SB	1	461.3	0.29	9.7	31.7	3.4	25	13,441
									Total	26,882

Emission Factors

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.04823			

Emisson Factors from CT-EMFAC2017

2021 Hourly Traffic Volumes and DPM Emissions - DPM_NB_R2

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	4.59E-03	17	10.00%	1344	4.59E-03
2	0.00%	0	0.00E+00	10	10.00%	1344	4.59E-03	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	4.59E-03	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	4.59E-03	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	4.59E-03	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	4.59E-03	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	4.59E-03	23	0.00%	0	0.00E+00
8	10.00%	1344	4.59E-03	16	10.00%	1344	4.59E-03	24	0.00%	0	0.00E+00
								Total		13,441	

2021 Hourly Traffic Volumes Per Direction and DPM Emissions - DPM_SB_R2

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	10.00%	1344	5.16E-03	17	10.00%	1344	5.16E-03
2	0.00%	0	0.00E+00	10	10.00%	1344	5.16E-03	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	5.16E-03	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	5.16E-03	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	5.16E-03	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	5.16E-03	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	5.16E-03	23	0.00%	0	0.00E+00
8	10.00%	1344	5.16E-03	16	10.00%	1344	5.16E-03	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 2
PM2.5 Modeling - Roadway Links, Traffic Volumes, and PM2.5 Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
PM2.5_NB_R2	Haul Route 2 Northbound	NB	1	410.5	0.26	9.7	32	1.3	25	13,441
PM2.5_SB_R2	Haul Route 2 Southbound	SB	1	461.3	0.29	9.7	32	1.3	25	13,441
									Total	26,882

Emission Factors - PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.045988			

Emisson Factors from CT-EMFAC2017

2021 Hourly Traffic Volumes and PM2.5 Emissions - PM2.5_NB_R2

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	4.38E-03	17	10.00%	1344	4.38E-03
2	0.00%	0	0.00E+00	10	10.00%	1344	4.38E-03	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	4.38E-03	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	4.38E-03	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	4.38E-03	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	4.38E-03	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	4.38E-03	23	0.00%	0	0.00E+00
8	10.00%	1344	4.38E-03	16	10.00%	1344	4.38E-03	24	0.00%	0	0.00E+00
								Total		13,441	

2021 Hourly Traffic Volumes Per Direction and PM2.5 Emissions - PM2.5_SB_R2

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	10.00%	1344	4.92E-03	17	10.00%	1344	4.92E-03
2	0.00%	0	0.00E+00	10	10.00%	1344	4.92E-03	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	4.92E-03	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	4.92E-03	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	4.92E-03	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	4.92E-03	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	4.92E-03	23	0.00%	0	0.00E+00
8	10.00%	1344	4.92E-03	16	10.00%	1344	4.92E-03	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 2
TOG Exhaust Modeling - Roadway Links, Traffic Volumes, and TOG Exhaust Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEXH_NB_R2	Haul Route 2 Northbound	NB	1	410.5	0.26	9.7	32	1.3	25	13,441
TEXH_SB_R2	Haul Route 2 Southbound	SB	1	461.3	0.29	9.7	32	1.3	25	13,441
									Total	26,882

Emission Factors - TOG Exhaust

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle (g/VMT)	0.24055			

Emisson Factors from CT-EMFAC2017

2021 Hourly Traffic Volumes and TOG Exhaust Emissions - TEXH_NB_R2

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	2.29E-02	17	10.00%	1344	2.29E-02
2	0.00%	0	0.00E+00	10	10.00%	1344	2.29E-02	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	2.29E-02	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	2.29E-02	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	2.29E-02	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	2.29E-02	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	2.29E-02	23	0.00%	0	0.00E+00
8	10.00%	1344	2.29E-02	16	10.00%	1344	2.29E-02	24	0.00%	0	0.00E+00
								Total		13,441	

2021 Hourly Traffic Volumes Per Direction and TOG Exhaust Emissions - TEXH_SB_R2

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	10.00%	1344	2.57E-02	17	10.00%	1344	2.57E-02
2	0.00%	0	0.00E+00	10	10.00%	1344	2.57E-02	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	2.57E-02	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	2.57E-02	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	2.57E-02	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	2.57E-02	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	2.57E-02	23	0.00%	0	0.00E+00
8	10.00%	1344	2.57E-02	16	10.00%	1344	2.57E-02	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 2
TOG Evaporative Emissions Modeling - Roadway Links, Traffic Volumes, and TOG Evaporative Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
TEVAP_NB_R2	Haul Route 2 Northbound	NB	1	410.5	0.26	9.7	32	1.3	25	13,441
TEVAP_SB_R2	Haul Route 2 Southbound	SB	1	461.3	0.29	9.7	32	1.3	25	13,441
									Total	26,882

Emission Factors - PM2.5 - Evaporative TOG

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Emissions per Vehicle per Hour (g/hour)	0.21792			
Emissions per Vehicle per Mile (g/VMT)	0.00872			

Emisson Factors from CT-EMFAC2017

2021 Hourly Traffic Volumes and TOG Evaporative Emissions - TEVAP_NB_R2

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	8.30E-04	17	10.00%	1344	8.30E-04
2	0.00%	0	0.00E+00	10	10.00%	1344	8.30E-04	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	8.30E-04	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	8.30E-04	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	8.30E-04	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	8.30E-04	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	8.30E-04	23	0.00%	0	0.00E+00
8	10.00%	1344	8.30E-04	16	10.00%	1344	8.30E-04	24	0.00%	0	0.00E+00
								Total		13,441	

2021 Hourly Traffic Volumes Per Direction and TOG Evaporative Emissions - TEVAP_SB_R2

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	10.00%	1344	9.33E-04	17	10.00%	1344	9.33E-04
2	0.00%	0	0.00E+00	10	10.00%	1344	9.33E-04	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	9.33E-04	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	9.33E-04	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	9.33E-04	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	9.33E-04	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	9.33E-04	23	0.00%	0	0.00E+00
8	10.00%	1344	9.33E-04	16	10.00%	1344	9.33E-04	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Off-Site Residential
Truck Trips - Hauling Route 2
Fugitive Road PM2.5 Modeling - Roadway Links, Traffic Volumes, and Fugitive Road PM2.5 Emissions
Year = 2021

Road Link	Description	Direction	No. Lanes	Link Length (m)	Link Length (mi)	Link Width (m)	Link Width (ft)	Release Height (m)	Average Speed (mph)	Average Vehicles per Day
FUG_NB_R2	Haul Route 2 Northbound	NB	1	410.5	0.26	9.7	32	1.3	25	13,441
FUG_SB_R2	Haul Route 2 Southbound	SB	1	461.3	0.29	9.7	32	1.3	25	13,441
									Total	26,882

Emission Factors - Fugitive PM2.5

Speed Category	1	2	3	4
Travel Speed (mph)	25			
Tire Wear - Emissions per Vehicle (g/VMT)	0.00669			
Brake Wear - Emissions per Vehicle (g/VMT)	0.03777			
Road Dust - Emissions per Vehicle (g/VMT)	0.12491			
otal Fugitive PM2.5 - Emissions per Vehicle (g/VMT)	0.16937			

Emisson Factors from CT-EMFAC2017

2021 Hourly Traffic Volumes and Fugitive PM2.5 Emissions - FUG_NB_R2

Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s	Hour	% Per Hour	VPH	g/s
1	0.00%	0	0.00E+00	9	10.00%	1344	1.61E-02	17	10.00%	1344	1.61E-02
2	0.00%	0	0.00E+00	10	10.00%	1344	1.61E-02	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	1.61E-02	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	1.61E-02	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	1.61E-02	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	1.61E-02	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	1.61E-02	23	0.00%	0	0.00E+00
8	10.00%	1344	1.61E-02	16	10.00%	1344	1.61E-02	24	0.00%	0	0.00E+00
								Total		13,441	

2021 Hourly Traffic Volumes Per Direction and Fugitive PM2.5 Emissions - FUG_SB_R2

Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile	Hour	% Per Hour	VPH	g/mile
1	0.00%	0	0.00E+00	9	10.00%	1344	1.81E-02	17	10.00%	1344	1.81E-02
2	0.00%	0	0.00E+00	10	10.00%	1344	1.81E-02	18	0.00%	0	0.00E+00
3	0.00%	0	0.00E+00	11	10.00%	1344	1.81E-02	19	0.00%	0	0.00E+00
4	0.00%	0	0.00E+00	12	10.00%	1344	1.81E-02	20	0.00%	0	0.00E+00
5	0.00%	0	0.00E+00	13	10.00%	1344	1.81E-02	21	0.00%	0	0.00E+00
6	0.00%	0	0.00E+00	14	10.00%	1344	1.81E-02	22	0.00%	0	0.00E+00
7	0.00%	0	0.00E+00	15	10.00%	1344	1.81E-02	23	0.00%	0	0.00E+00
8	10.00%	1344	1.81E-02	16	10.00%	1344	1.81E-02	24	0.00%	0	0.00E+00
								Total		13,441	

Fisher Detention Basin, Morgan Hill, CA - Haul Route 2 Truck Trips - DPM & PM2.5
AERMOD Risk Modeling Parameters and Maximum Concentrations
at Construction Residential MEI Receptor (1.5 meter receptor height)

Emission Year	2021
Receptor Information	Construction Residential MEI receptor
Number of Receptors	1
Receptor Height	1.5 meters
Receptor Distances	At Construction Residential MEI location

Meteorological Conditions	
BAQMD Moffett Airfield Met Data	2013-2017
Land Use Classification	Urban
Wind Speed	Variable
Wind Direction	Variable

Construction Residential MEI Cancer Risk Maximum Concentrations

Meteorological Data Years	Concentration (µg/m3)*		
	DPM	Exhaust TOG	Evaporative TOG
2013-2017	0.0001	0.0006	0.0000

Construction Residential MEI PM2.5 Maximum Concentrations

Meteorological Data Years	PM2.5 Concentration (µg/m3)*		
	Total PM2.5	Fugitive PM2.5	Vehicle PM2.5
2013-2017	0.0005	0.0004	0.0001

Fisher Detention Basin, Morgan Hill, CA - Haul Route 2 Truck Trip Cancer Risk
Impacts at Construction Residential MEI - 1.5 meter receptor height
30 Year Residential Exposure

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00
Vehicle TOG Exhaust	6.28E-03
Vehicle TOG Evaporative	3.70E-04

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Maximum - Exposure Information					Concentration (ug/m3)			Cancer Risk (per million)			TOTAL
Exposure Year	Exposure Duration (years)	Age	Year	Age Sensitivity Factor	DPM	Exhaust TOG	Evaporative TOG	DPM	Exhaust TOG	Evaporative TOG	
0	0.25	-0.25 - 0*	2021	10	0.0001	0.0006	0.0000	0.002	0.000	0.0000	0.00
1	1	0 - 1	2021	10	0.0001	0.0006	0.0000	0.021	0.001	0.0000	0.02
2	1	1 - 2	2022	10	0.0001	0.0006	0.0000	0.021	0.001	0.0000	0.02
3	1	2 - 3	2023	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
4	1	3 - 4	2024	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
5	1	4 - 5	2025	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
6	1	5 - 6	2026	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
7	1	6 - 7	2027	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
8	1	7 - 8	2028	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
9	1	8 - 9	2029	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
10	1	9 - 10	2030	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
11	1	10 - 11	2031	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
12	1	11 - 12	2032	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
13	1	12 - 13	2033	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
14	1	13 - 14	2034	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
15	1	14 - 15	2035	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
16	1	15 - 16	2036	3	0.0001	0.0006	0.0000	0.003	0.000	0.0000	0.00
17	1	16-17	2037	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
18	1	17-18	2038	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
19	1	18-19	2039	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
20	1	19-20	2040	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
21	1	20-21	2041	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
22	1	21-22	2042	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
23	1	22-23	2043	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
24	1	23-24	2044	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
25	1	24-25	2045	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
26	1	25-26	2046	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
27	1	26-27	2047	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
28	1	27-28	2048	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
29	1	28-29	2049	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
30	1	29-30	2050	1	0.0001	0.0006	0.0000	0.000	0.000	0.0000	0.00
Total Increased Cancer Risk								0.10	0.003	0.000	**0.10**

Hazard Index	Maximum Fugitive PM2.5	Total PM2.5
0.0000	0.00	0.00

* Third trimester of pregnancy

LIVE OAK ASSOCIATES, INC.
an Ecological Consulting Firm

March 9, 2021

Ms. Amanda Musy-Verdel, P.E., QSD
Hanna-Brunetti
7651 Eigleberry St.
Gilroy, CA 95020

Subject: Fisher Basin Tree Survey, Arborist Report and Preliminary Tree Protection Guidelines, City of Morgan Hill, Santa Clara County, California (PN 2520-01)

Dear Ms. Musy-Verdel:

Per your request, Live Oak Associates (LOA) completed a tree survey for the approximately 8-acre Fisher Basin project site (APN 726-25-028) located northeast of the intersection of Monterey Road and Old Monterey Road in the City of Morgan Hill. (Figure 1). This report provides our methods and findings with regard to the survey, discusses tree impacts on trees that may be considered protected trees under the City of Morgan Hill's tree ordinance, and provides general tree protection measures for retained trees.

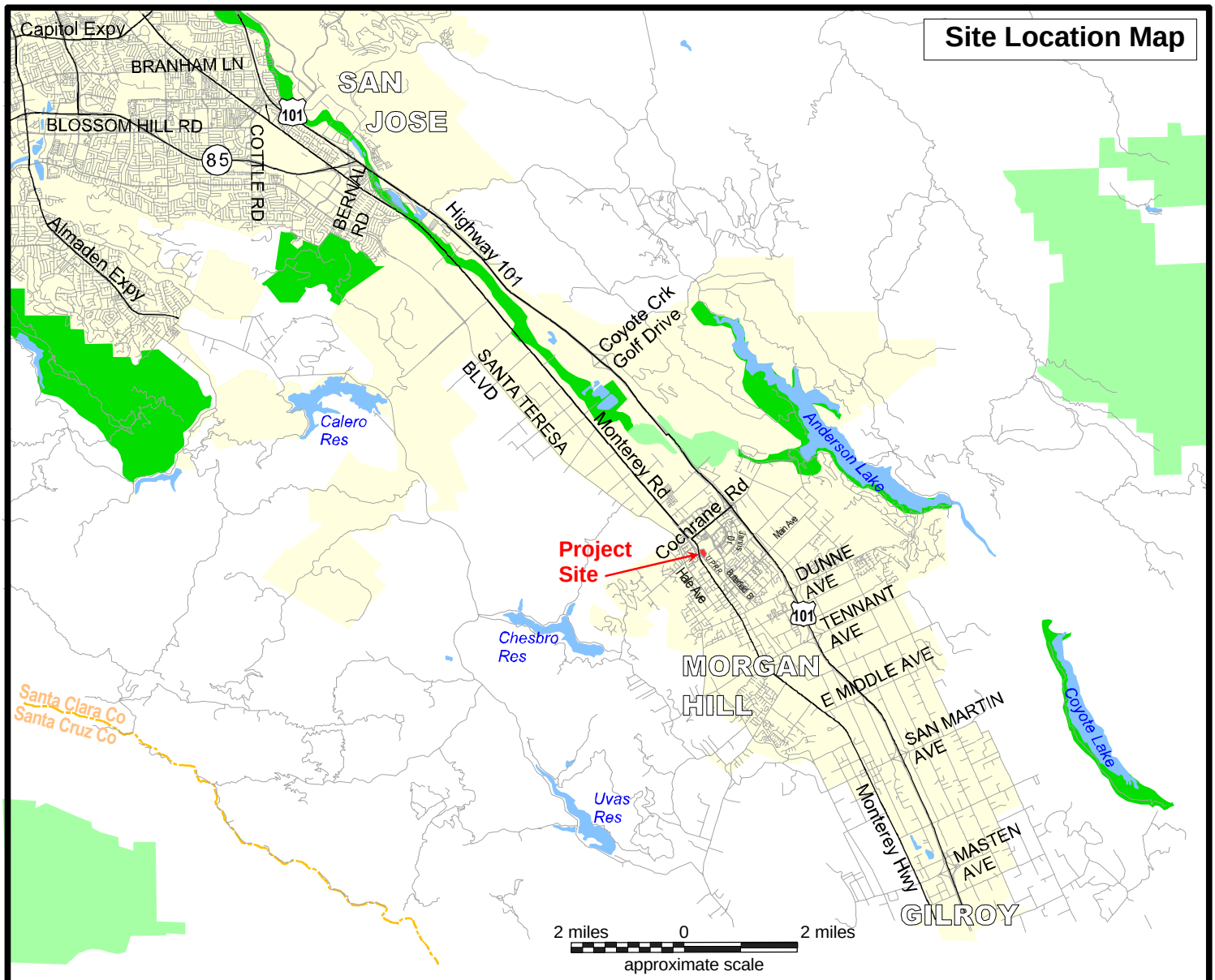
CITY OF MORGAN HILL TREE ORDINANCE

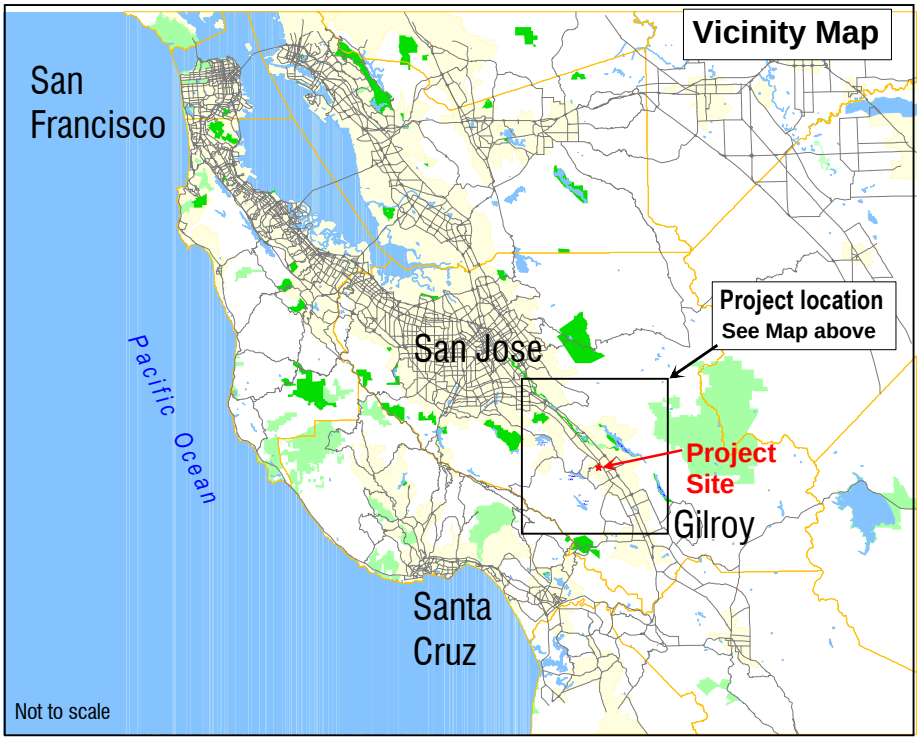
The City of Morgan Hill has a tree protection ordinance (Section 12.32.020 in Morgan Hill's Municipal Code). The ordinance defines protected trees as follows:

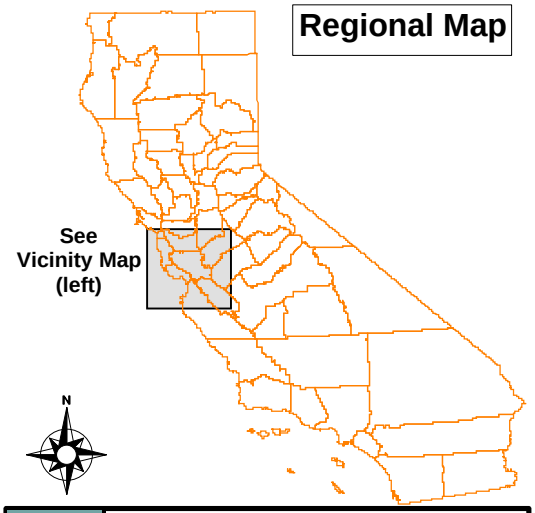
- *"Ordinance Sized Tree" means any live woody plant rising above the ground with a single stem or trunk of a circumference of forty inches or more for nonindigenous species and eighteen inches or more for indigenous species measured at four and one-half feet vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes. All commercial tree farms, nonindigenous tree species in residential zones and orchards (including individual fruit trees) are exempted from the definition of tree for the purpose of this chapter.*

- *"Street Tree" is a tree, of any size, situated within the public street right-of-way or publicly accessible private street (e.g., trees within a landscape park strip), or within five feet of a publicly accessible sidewalk adjacent to a public or private street in the case of a street without a landscape park strip.*

- *"Indigenous tree" means any tree which is native to the Morgan Hill region. Such trees include, oaks (all types), California Bays, Madrones, Sycamore, and Alder.*







Live Oak Associates, Inc.

Fisher Basin
Vicinity Map

Date	Project #	Figure #
3/08/2021	2520-01	1

For purposes of this evaluation, any indigenous tree with a circumference of 18 inches or greater (approximately 6 inches in diameter), and any non-indigenous tree with a circumference of 40 inches or greater (approximately 13 inches in diameter) was assigned "Ordinance Sized Tree" designation.

METHODS

The tree survey for this report was conducted by LOA Certified Arborist Neal Kramer on October 23, 2020 and January 12, 2021. Data, including species, trunk diameter, estimated height, estimated canopy spread, and general condition were recorded for all trees on the Fisher Basin site having a trunk circumference of 18 inches or greater (approximately 6 inches or greater trunk diameter) as measured at 4 ½ feet (54 inches) above grade.

A limited visual assessment of health and structure was used to assign a general condition rating for each tree according to the following scale:

- Good = 80-100% healthy foliage and no significant defects;
- Fair = 50-79% healthy foliage and/or minor defects:
- Poor = 5-49% healthy foliage and/or other significant defects; and
- Dead = less than 5% healthy foliage.

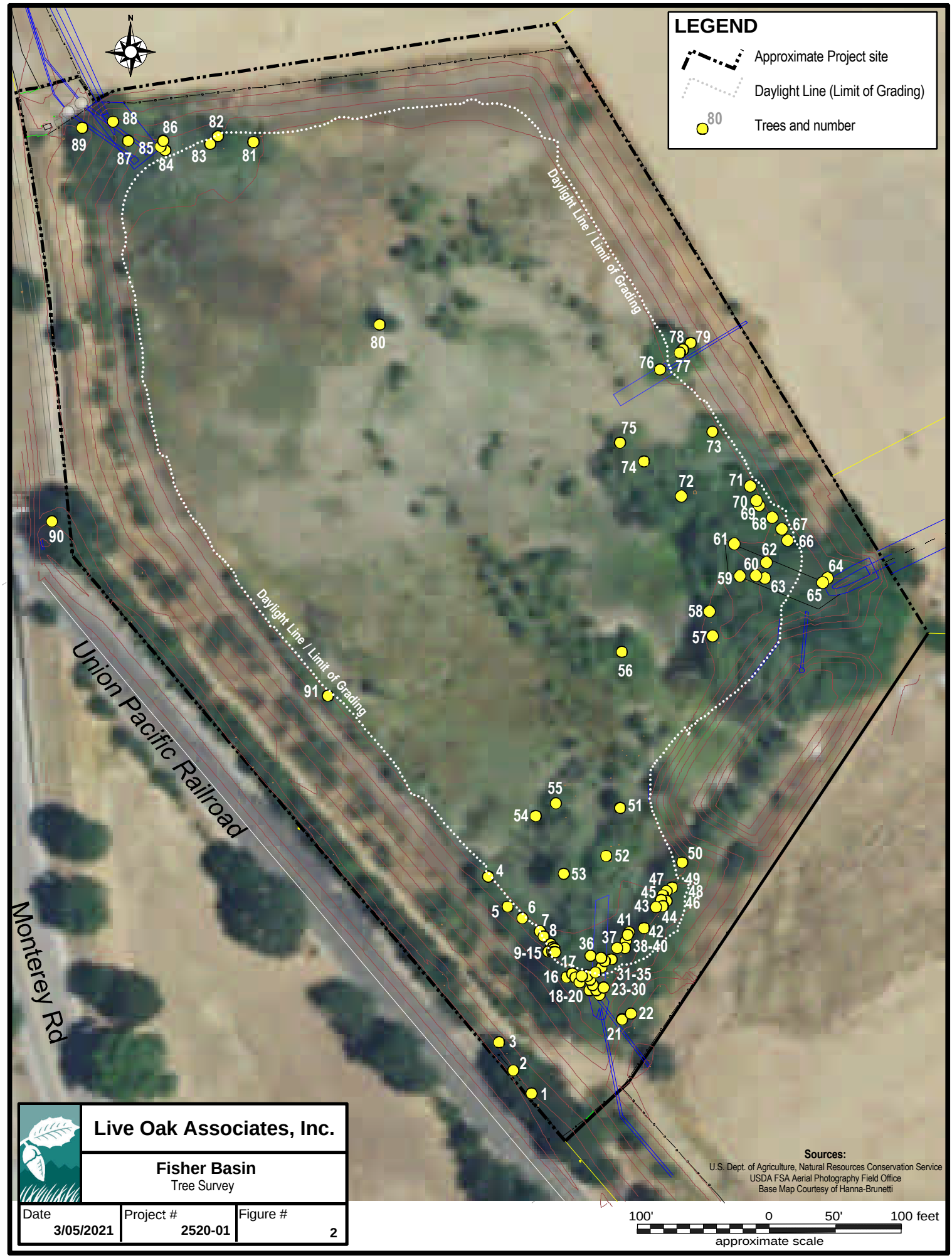
Each tree surveyed was marked with a numbered metal tag and an approximate location of each tree was mapped in the field using the ArcGIS Collector Application. The ArcGIS Collector data was then used to prepare the tree survey map.

SURVEY RESULTS AND DISCUSSION

A total of 91 trees were documented on the Fisher Basin project site during the tree survey (tree tags #1 through #91). Approximate locations for all trees surveyed are shown on Figure 2, and a summary of information collected for each tree is provided with this report in Table 1 (Appendix A).

All but three of the 91 trees surveyed are indigenous trees. Non-indigenous trees included a plane tree (*Platanus occidentalis*; #87), an evergreen ash (*Fraxinus uhdei*; #88), and a Brazilian pepper (*Schinus terebinthifolia*; #89). One of these non-indigenous trees, i.e. the plane tree with a trunk diameter of 6 inches (trunk circumference of approximately 19 inches), did not meet the City of Morgan Hill criteria of ordinance-size. The other two non-indigenous trees were both multi-trunked trees where the sum of the trunk diameters would meet the ordinance-size criteria, but with no single trunk meeting the criteria. Therefore, these latter two trees are considered potentially ordinance-sized.

The remaining 88 trees surveyed are indigenous trees common to woodland and riparian habitats of the Morgan Hill area. All of the 88 indigenous trees met the criteria of ordinance-sized. These latter trees included 46 red willows (*Salix laevigata*; #4, 6, 7, 8, 10, 11, 13, 17, 19, 23, 24, 28, 30, 34, 35, 36, 37, 40, 45, 47, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 66, 67, 68, 69, 70, 72, 73, 74, 75, 76, 81, 83); 33 Fremont's cottonwood (*Populus fremontii*; 5, 9, 12, 14, 15, 16, 18, 20, 25, 26, 27, 29, 31, 32, 33, 38, 39, 41, 42, 43, 44, 46, 48, 49, 64, 65, 71, 77, 78,



Live Oak Associates, Inc.

Fisher Basin
Tree Survey

Date	Project #	Figure #
3/05/2021	2520-01	2

79, 80, 82, 91), five coast live oaks (*Quercus agrifolia*; #1, 2, 3, 21, 22); three Goodding's black willow (*Salix gooddingii*; #84, 85 and 86); and one valley oak (*Quercus lobata*; #90).

PROJECT IMPACTS TO TREES AND TREE PROTECTION

The Preliminary Excavation and Grading Plans prepared by Hanna-Brunetti, as described above, were used to evaluate potential project impacts to trees documented for this report. Impacts to trees have been grouped into 3 categories: 1) impacts unlikely, tree to be retained, 2) tree outside grading limits but could be impacted, tree protection measures necessary if retained, 3) tree will be removed. The status of each tree as either retained, possibly retained or removed is indicated in the Retained Tree column on Table 1 (Appendix A) and trees in each category are summarized below.

Tree protection measures for all trees to be retained are provided below.

Potentially Retained Trees. Based on the Hanna-Brunettii preliminary plans, of the 91 trees documented on the site, 12 will not likely be impacted by the proposed project and can be retained. Retained trees include five coast live oaks (Trees 1-3, 21 and 22), three Fremont cottonwoods (Trees 64, 65 and 79), one plane tree (Tree 87), one evergreen ash (Tree 88), one Brazilian pepper (Tree 89), and one valley oak (Tree 89).

An additional 23 trees located near proposed grading limits could be impacted by project grading activities, but could possibly be retained with appropriate tree protection measures. These include 11 red willows (Trees 4, 6, 11, 17-19, 23, 24, 28, 30 and 50), nine Fremont cottonwoods (Trees 5, 16, 20, 25-27, 29, 77 and 78) and three Goodding's black willows (Trees 84-86).

Trees That Will Be Removed For The Project. Based on the Hanna-Brunettii preliminary plans, the remaining 56 trees will be removed for the project as they occur within the grading limits for the project. Trees to be removed include 37 red willows (Trees 7, 8, 10, 12, 13, 34-37, 40, 45, 47, 51-63, 66-70, 72-76, 81and 83) and 19 Fremont cottonwoods (Trees 9, 14, 15, 31-33, 38, 39, 41-43, 46, 48, 49, 71, 79, 80, 82 and 91).

GENERAL TREE PROTECTION PLAN

A general Tree Protection Plan to minimize project impacts to trees being potentially retained, and to ensure their long-term health and survival, is provided below. *Once grading limits have been staked on the project site, the project arborist should revisit the site to reconfirm which trees will need to be removed and which can be retained, and to provide more specific tree protection guidelines for trees to be retained if necessary.*

Tree Protection Zone

- A Tree Protection Zone (TPZ) shall be defined by the Project Arborist for all retained trees that could be impacted by project activities.
- The TPZ will be protected by a fenced enclosure to prevent unauthorized access during project activities. Fencing shall be constructed of six foot chain link, mounted on two inch diameter galvanized iron posts, at no more than 10-foot spacing. Warning signs

(e.g. *WARNING - Tree Protection Zone – This fence shall not be moved without approval by Project Arborist*) shall be prominently displayed and visible from all sides of the TPZ fencing.

- TPZ fencing shall be installed prior to any demolition, grading, staging, stockpiling, or any other construction activities, and shall remain in place until all construction activities are complete.
- No construction, staging, or storage of materials, equipment or vehicles shall occur within a TPZ without advanced approval and oversite by the project arborist.
- No excess soil, chemicals, refuse or other waste shall be dumped within a TPZ.
- The primary contractor shall be responsible for maintaining TPZ fencing and for enforcing all TPZ guidelines outlined above throughout the course of the project.

Site Grading, Excavation and Trenching

- Soil disturbance or grade changes within a Tree Protection Zone (TPZ) are not permitted unless approved by the Project Arborist. Any approved grading, excavation or trench work within a TPZ will be field staked and inspected by the Project Arborist prior to implementation.
- Grade changes in the vicinity of trees to be preserved should remain as close to natural grade as possible.
- If trenching is required and approved within a TPZ, trenches shall be dug by hand or with specialized equipment approved by the Project Arborist.

Tree Canopy Pruning

- To the extent possible, any necessary canopy pruning should be completed prior to the commencement of any construction activities.
- Pruning shall be performed by a qualified tree service worker under the direction of a certified arborist following International Society of Arboriculture tree pruning best management practices. Pruning shall not be performed by construction personnel.

Root Pruning

- Any roots one inch and larger requiring removal shall be cut cleanly in sound tissue. No pruning seals or paint shall be used on wounds.
- Roots two inches and greater shall remain in place and undamaged to the extent practicable. If removal is required, cuts shall be made with the approval and under the direction of a certified arborist.

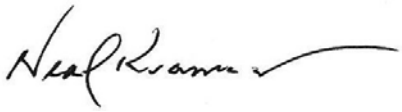
Communication for Tree Protection Compliance

- A preconstruction meeting shall be arranged for the Project Arborist to meet with the Project Planner, Onsite Project Supervisor, Demolition and Grading Contractors and/or other appropriate Project Leads to review and secure a commitment to compliance with all tree protection measures.

Unless expressed otherwise, the evaluation of trees discussed in this report is limited to a visual examination of accessible parts without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the trees in question may not arise in the future.

If you have questions regarding findings or other elements of this report, please feel free to contact me at either (650) 563-9943 or (650) 208-0061.

Sincerely,



Neal Kramer
Certified Arborist #WE-7833A

APPENDIX A:
TREE TABLE

TABLE 1. Results of the Fisher Basin Tree Survey. Tree numbers of trees meeting, or potentially meeting, the City of Morgan Hill's definition of an ordinance-size tree are in bold.

Tree #	Species	Common Name	Trunk diameter @ 54" above grade (inches)	Approx. Height (feet)	Approx. Canopy Spread (feet)	Indigenous Tree	General Condition**	Ordinance-size Tree	Retained Tree	Comments
1	*Quercus agrifolia*	Coast Live Oak	20	32	32	Yes	Good	Yes	Yes	
2	*Quercus agrifolia*	Coast Live Oak	17	30	26	Yes	Good	Yes	Yes	
3	*Quercus agrifolia*	Coast Live Oak	11.5	18	14	Yes	Fair	Yes	Yes	
4	*Salix laevigata*	Red Willow	Multistem 10, 7	25	26	Yes	Fair	Yes	Possibly	Occurs close to grading line; multistem from base
5	*Populus fremontii*	Fremont's Cottonwood	7	32	12	Yes	Good	Yes	Possibly	Occurs close to grading line
6	*Salix laevigata*	Red Willow	Multistem 10.5, 8, 6	22	22	Yes	Fair	Yes	Possibly	Multistem from base
7	*Salix laevigata*	Red Willow	Multistem 6.5, 7.5	34	15	Yes	Good	Yes		Multistem from base
8	*Salix laevigata*	Red Willow	6.5	30	8	Yes	Fair	Yes		
9	*Populus fremontii*	Fremont's Cottonwood	8	50	15	Yes	Good	Yes		
10	*Salix laevigata*	Red Willow	6.5	42	10	Yes	Fair	Yes		
11	*Salix laevigata*	Red Willow	8	10	30	Yes	Poor	Yes	Possibly	Occurs close to grading line
12	*Salix laevigata*	Red Willow	Multistem 16, 8.5	60	18	Yes	Good	Yes		Multistem from base
13	*Salix laevigata*	Red Willow	Multistem 17.5, 12	36	36	Yes	Good	Yes		Multistem from base
14	*Populus fremontii*	Fremont's Cottonwood	7	30	30	Yes	Poor	Yes		20% dead canopy, trunk bowed to the west
15	*Populus fremontii*	Fremont's Cottonwood	9.5	30	25	Yes	Poor	Yes		20% dead canopy, trunk bowed to the west
16	*Populus fremontii*	Fremont's Cottonwood	10	50	25	Yes	Fair	Yes	Possibly	Occurs close to grading line
17	*Salix laevigata*	Red Willow	Multistem 10.5, 9	30	25	Yes	Fair	Yes	Possibly	Occurs close to grading line; multistem from base
18	*Salix laevigata*	Red Willow	Multistem 10.5, 7, 7.5, 18.5, 13.5	56	32	Yes	Good	Yes	Possibly	Occurs close to grading line; multistem from base

TABLE 1. Results of the Fisher Basin Tree Survey. Tree numbers of trees meeting, or potentially meeting, the City of Morgan Hill's definition of an ordinance-size tree are in bold.

Tree #	Species	Common Name	Trunk diameter @ 54" above grade (inches)	Approx. Height (feet)	Approx. Canopy Spread (feet)	Indigenous Tree	General Condition**	Ordinance-size Tree	Retained Tree	Comments
19	*Salix laevigata*	Red Willow	Multistem 10, 7	12	36	Yes	Poor	Yes	Possibly	Multistem from base; occurs close to grading line, initial 10 feet of trunk laying on the ground
20	*Populus fremontii*	Fremont's Cottonwood	13.5	30	36	Yes	Fair	Yes	Possibly	Occurs close to grading line
21	*Quercus agrifolia*	Coast Live Oak	7.5	26	16	Yes	Fair	Yes	Yes	
22	*Quercus agrifolia*	Coast Live Oak	9	28	15	Yes	Good	Yes	Yes	
23	*Salix laevigata*	Red Willow	Multistem 7.5, 10.5, 14, 8, 7	36	40	Yes	Fair	Yes	Possibly	Occurs close to grading line; multistem from base
24	*Salix laevigata*	Red Willow	10	28	36	Yes	Fair	Yes	Possibly	Occurs close to grading line
25	*Populus fremontii*	Fremont's Cottonwood	14	36	25	Yes	Fair	Yes	Possibly	Occurs close to grading line
26	*Populus fremontii*	Fremont's Cottonwood	8	32	30	Yes	Fair	Yes	Possibly	Occurs close to grading line
27	*Populus fremontii*	Fremont's Cottonwood	11	32	32	Yes	Fair	Yes	Possibly	Occurs close to grading line
28	*Salix laevigata*	Red Willow	8.5	30	20	Yes	Fair	Yes	Possibly	Occurs close to grading line
29	*Populus fremontii*	Fremont's Cottonwood	10.5	50	30	Yes	Good	Yes	Possibly	Occurs close to grading line
30	*Salix laevigata*	Red Willow	7	45	8	Yes	Poor	Yes	Possibly	Occurs close to grading line, 80% dead canopy
31	*Populus fremontii*	Fremont's Cottonwood	9	48	18	Yes	Good	Yes		
32	*Populus fremontii*	Fremont's Cottonwood	14	54	20	Yes	Good	Yes		
33	*Populus fremontii*	Fremont's Cottonwood	9	60	30	Yes	Fair	Yes		
34	*Salix laevigata*	Red Willow	7	18	8	Yes	Poor	Yes		Suppressed, 80% dead canopy
35	*Salix laevigata*	Red Willow	6	28	10	Yes	Fair	Yes		
36	*Salix laevigata*	Red Willow	7.5	36	25	Yes	Fair	Yes		
37	*Salix laevigata*	Red Willow	6.5	36	12	Yes	Fair	Yes		

TABLE 1. Results of the Fisher Basin Tree Survey. Tree numbers of trees meeting, or potentially meeting, the City of Morgan Hill's definition of an ordinance-size tree are in bold.

Tree #	Species	Common Name	Trunk diameter @ 54" above grade (inches)	Approx. Height (feet)	Approx. Canopy Spread (feet)	Indigenous Tree	General Condition**	Ordinance-size Tree	Retained Tree	Comments
38	*Populus fremontii*	Fremont's Cottonwood	Multistem 12.5, 6.5	46	30	Yes	Good	Yes		Multistem from base
39	*Populus fremontii*	Fremont's Cottonwood	Multistem 14, 10.5	54	32	Yes	Good	Yes		Multistem from base
40	*Salix laevigata*	Red Willow	9	30	20	Yes	Fair	Yes		
41	*Populus fremontii*	Fremont's Cottonwood	13.5	54	20	Yes	Good	Yes		
42	*Populus fremontii*	Fremont's Cottonwood	11	38	30	Yes	Good	Yes		
43	*Populus fremontii*	Fremont's Cottonwood	6.5	38	16	Yes	Good	Yes		
44	*Populus fremontii*	Fremont's Cottonwood	10.5	45	28	Yes	Good	Yes		
45	*Salix laevigata*	Red Willow	Multistem 8, 15	38	26	Yes	Fair	Yes		Multistem from base
46	*Populus fremontii*	Fremont's Cottonwood	6.5	45	20	Yes	Fair	Yes		
47	*Salix laevigata*	Red Willow	6	26	15	Yes	Fair	Yes		
48	*Populus fremontii*	Fremont's Cottonwood	9.5	40	24	Yes	Good	Yes		
49	*Populus fremontii*	Fremont's Cottonwood	8	38	24	Yes	Good	Yes		
50	*Salix laevigata*	Red Willow	8.5	24	20	Yes	Fair	Yes	Possibly	
51	*Salix laevigata*	Red Willow	7	22	15	Yes	Good	Yes		
52	*Salix laevigata*	Red Willow	Multistem 6, 7, 8, 8	22	32	Yes	Fair	Yes		Multistem from base
53	*Salix laevigata*	Red Willow	15	30	34	Yes	Good	Yes		
54	*Salix laevigata*	Red Willow	6	24	15	Yes	Poor	Yes		60% dead canopy
55	*Salix laevigata*	Red Willow	9.5	34	14	Yes	Fair	Yes		
56	*Salix laevigata*	Red Willow	7	26	15	Yes	Good	Yes		
57	*Salix laevigata*	Red Willow	Multistem 13, 7.5, 11.5	28	30	Yes	Fair	Yes		
58	*Salix laevigata*	Red Willow	10	26	20	Yes	Fair	Yes		

TABLE 1. Results of the Fisher Basin Tree Survey. Tree numbers of trees meeting, or potentially meeting, the City of Morgan Hill's definition of an ordinance-size tree are in bold.

Tree #	Species	Common Name	Trunk diameter @ 54" above grade (inches)	Approx. Height (feet)	Approx. Canopy Spread (feet)	Indigenous Tree	General Condition**	Ordinance-size Tree	Retained Tree	Comments
59	*Salix laevigata*	Red Willow	Multistem 6.5, 12.5, 8, 11	38	38	Yes	Fair	Yes		Multistem from base
60	*Salix laevigata*	Red Willow	Multistem 8.5, 6, 7, 11	38	28	Yes	Fair	Yes		
61	*Salix laevigata*	Red Willow	10, 8, 7, 8, 13, 16, 9, 12	42	50	Yes	Good	Yes		Multistem from base
62	*Salix laevigata*	Red Willow	Multistem 10, 7, 8, 8, 8	45	35	Yes	Fair	Yes		Multistem from base
63	*Salix laevigata*	Red Willow	Multistem 11, 8	36	35	Yes	Fair	Yes		Multistem from base
64	*Populus fremontii*	Fremont's Cottonwood	16.5	35	34	Yes	Good	Yes	Yes	
65	*Populus fremontii*	Fremont's Cottonwood	9	44	15	Yes	Fair	Yes	Yes	
66	*Salix laevigata*	Red Willow	Multistem 11, 6	40	30	Yes	Fair	Yes		Multistem from base
67	*Salix laevigata*	Red Willow	Multistem 11, 10	45	26	Yes	Fair	Yes		Multistem from base
68	*Salix laevigata*	Red Willow	Multistem 9, 9, 8, 7, 8, 9, 10	40	38	Yes	Fair	Yes		Multistem from base
69	*Salix laevigata*	Red Willow	Multistem 7, 7, 6, 8, 6	40	30	Yes	Fair	Yes		
70	*Salix laevigata*	Red Willow	Multistem 12, 8, 7	36	30	Yes	Fair	Yes		Multistem from base
71	*Populus fremontii*	Fremont's Cottonwood	12	45	20	Yes	Good	Yes		
72	*Salix laevigata*	Red Willow	Multistem 11, 7, 9, 6, 10, 8	40	40	Yes	Fair	Yes		Multistem from base
73	*Salix laevigata*	Red Willow	Multistem 9, 7, 8, 7	22	24	Yes	Fair	Yes		Multistem from base
74	*Salix laevigata*	Red Willow	10.5	24	18	Yes	Fair	Yes		
75	*Salix laevigata*	Red Willow	7.5	24	24	Yes	Fair	Yes		

TABLE 1. Results of the Fisher Basin Tree Survey. Tree numbers of trees meeting, or potentially meeting, the City of Morgan Hill's definition of an ordinance-size tree are in bold.

Tree #	Species	Common Name	Trunk diameter @ 54" above grade (inches)	Approx. Height (feet)	Approx. Canopy Spread (feet)	Indigenous Tree	General Condition**	Ordinance-size Tree	Retained Tree	Comments
76	*Salix laevigata*	Red Willow	7.5	18	12	Yes	Poor	Yes		20% dead canopy, base of trunk outside canopy dripline
77	*Populus fremontii*	Fremont's Cottonwood	9	36	16	Yes	Fair	Yes	Possibly	Occurs close to grading line
78	*Populus fremontii*	Fremont's Cottonwood	11.5	36	28	Yes	Good	Yes	Possibly	Occurs close to grading line
79	*Populus fremontii*	Fremont's Cottonwood	14.5	38	42	Yes	Good	Yes	Yes	
80	*Populus fremontii*	Fremont's Cottonwood	10	24	16	Yes	Good	Yes		
81	*Salix laevigata*	Red Willow	Multistem 9, 8.5	25	25	Yes	Good	Yes		Multistem from base
82	*Populus fremontii*	Fremont's Cottonwood	12.5	32	22	Yes	Good	Yes		
83	*Salix laevigata*	Red Willow	7.5	26	28	Yes	Good	Yes		
84	*Salix gooddingii*	Goodding's Black Willow	7	36	20	Yes	Fair	Yes	Possibly	Occurs close to grading line
85	*Salix gooddingii*	Goodding's Black Willow	9	38	22	Yes	Good	Yes	Possibly	Occurs close to grading line
86	*Salix gooddingii*	Goodding's Black Willow	Multistem 6.5, 7.5	36	24	Yes	Good	Yes	Possibly	Multistem. Occurs close to grading line
87	*Platanus occidental*	American Plane Tree	6	28	16	No	Good	No	Yes	
88	*Fraxinus uhdea*	Evergreen Ash	Multistem 12, 8.5, 8	34	30	No	Good	Yes	Yes	Multistem from base
89	*Schinus terebinthifo*	Brazilian Pepper	Multistem 11, 6	24	28	No	Good	Possibly	Yes	Multistem from base
90	*Quercus lobata*	Valley Oak	Multistem 17, 29, 22	42	58	Yes	Good	Yes	Yes	Multistem. Adjacent to project site with overhanging canopy
91	*Populus fremontii*	Fremont's Cottonwood	6.5	28	10	Yes	Good	Yes		

APPENDIX B:
REPRESENTATIVE PHOTOGRAPHS OF ORDINANCE-SIZE TREES OCCURRING ON THE FISHER BASIN SURVEY AREA

Tree 1. Ordinance-size coast live oak (*Quercus agrifolia*) that will be retained.

Tree 4. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that occurs outside of but close to the grading limit and may be retained.

Tree 6. Ordinance-size red willow (*Salix laevigata*) that occurs outside of but close to the grading limit and may be retained.

Tree 12. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 13. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 17. Ordinance-size red willow (*Salix laevigata*) that occurs outside of but close to the grading limit and may be retained.

Tree 18. Ordinance-size, multi-stem red willow (*Salix laevigata*) that occurs outside of but close to the grading limit and may be retained.

Tree 23. Ordinance-size, multi-stem red willow (*Salix laevigata*) that occurs outside of but close to the grading limit and may be retained.

Tree 38. Ordinance-size, multi-stem Fremont's cottonwood (*Populus fremontii*) that will be removed by the project.

Tree 39. Ordinance-size, multi-stem Fremont's cottonwood (*Populus fremontii*) that will be removed by the project.

Tree 45. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 52. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 57. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 59. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 60. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 61. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 62. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 63. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 67. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 68. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 69. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 70. Ordinance-size multi-stem (from base) red willow (*Salix laevigata*) that will be removed by the project.

Tree 88. Ordinance-size evergreen ash (Fraxinus uhdea) that will be retained by the project.

Tree 90. Ordinance size valley oak (*Quercus lobata*) that will be retained by the project.

H. T. HARVEY & ASSOCIATES

Ecological Consultants

50 years of field notes, exploration, and excellence

Fisher Creek Detention Basin
Biological Resources Report

Project #4454-01

Prepared for:

Patrick Kallas
David J. Powers & Associates, Inc.
1871 The Alameda, Suite 200
San José, CA 95126

Prepared by:

H. T. Harvey & Associates

May 25, 2021

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List of Preparers

Steve Rottenborn, Ph.D., Principal/Senior Wildlife Ecologist
Katie Gallagher, M.S., Project Manager/Senior Plant Ecologist
Mark Bibbo, M.S., Associate Plant/Wetland Ecologist
Emily Malkauskas, B.S., Wildlife Ecologist

Section 1. Introduction

This report describes the biological resources present in the area of the proposed Fisher Creek Basin Project (project), as well as the potential biological impacts of the proposed project and measures necessary to reduce these impacts to less-than-significant levels under the California Environmental Quality Act (CEQA). This assessment is based on the project maps and description provided to H. T. Harvey & Associates by David J. Powers & Associates through May 2021.

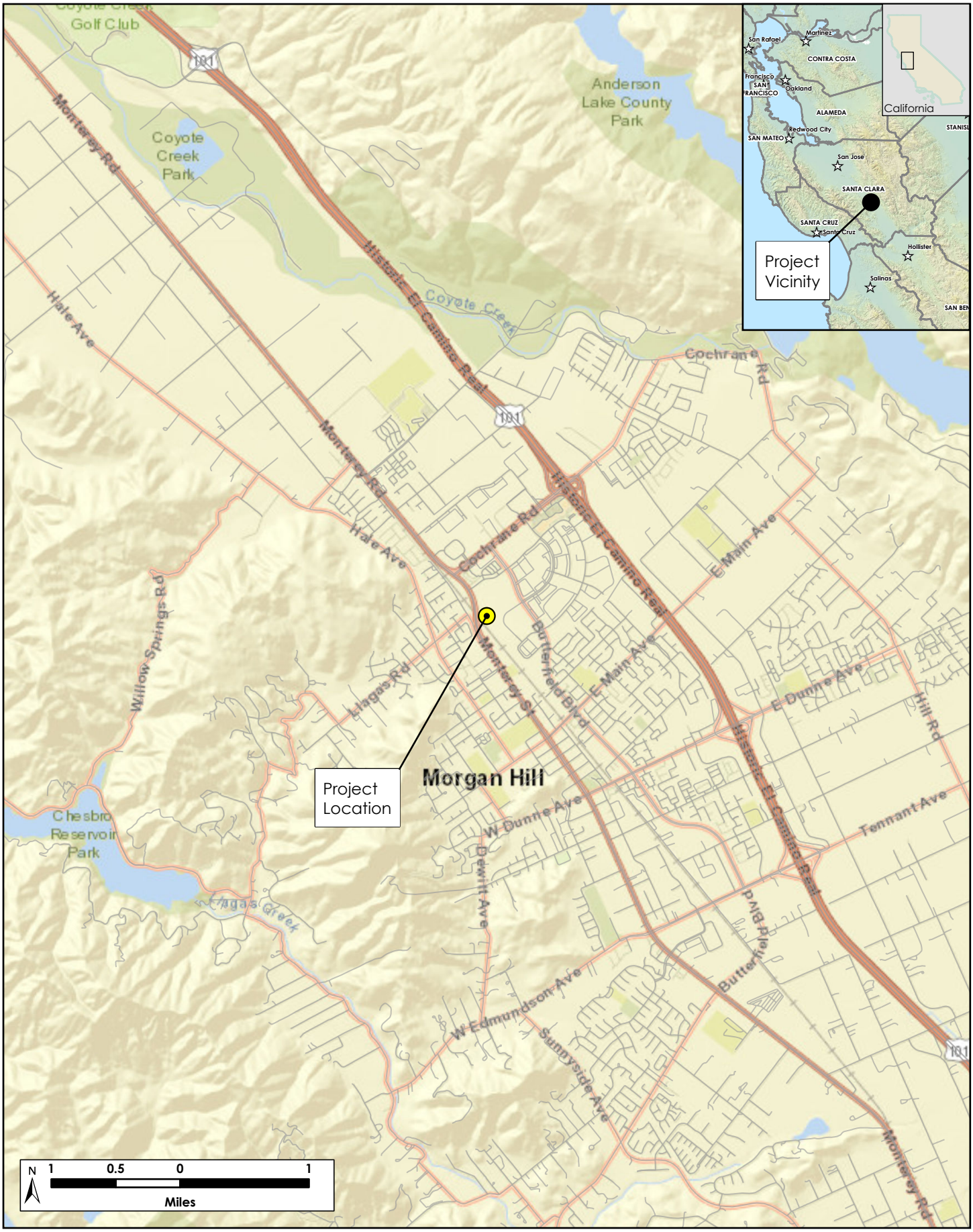
1.1 Project Location

The proposed project is located in the City of Morgan Hill (City), California (Figure 1). The project consists of excavating sediment from the Fisher Creek Detention Basin (basin). The City owns and operates this regional drainage basin located between Monterey Road and Butterfield Boulevard, north of Digital Drive and south of Jarvis Drive. The basin provides detention for the Morgan Hill Ranch Business Park and ultimately drains into Fisher Creek. The basin is located on the *Morgan Hill* 7.5-minute United States Geological Survey (USGS) quadrangle. The basin was originally constructed in an upland setting.

1.2 Project Description

To meet future detention and retention needs of the City in the project vicinity, and based upon new estimates of future rainfall load, the City desires to excavate this existing asset and introduce more storage capacity. The project would excavate 81,000 cubic yards of soil over five weeks. This material would be excavated from the toe of the slopes, an area of roughly 3.59 acres, rendering the basin bottom six feet lower than the existing elevation. Materials from the excavation would be disposed at the Kirby Canyon Landfill or sent to a development site in the City in need of surplus soil, which would reduce the length of trips (compared to Kirby Canyon) needed to deposit and dispose of the dirt. A bioretention basin associated with an adjacent development outside the project area was constructed within the southeast corner of the larger Fisher Creek Detention Basin earlier this year (Photo 2, Appendix C; Figure 2). A second bioretention basin, also associated with an adjacent development, will be constructed within the northeast corner of the larger basin in the future; the future location of this second bioretention basin is shown in Photo 6, Appendix C and on Figure 2. The biological impacts associated with the construction of these two bioretention basins associated with adjacent developments are not analyzed as a part of this project.

The basin is located within the Santa Clara Valley Habitat Plan (VHP) permit area, and the proposed project is a "covered project" under the VHP (ICF International 2012). As a result, the proposed project is required by the City of Morgan Hill to pay VHP fees for land impacts in accordance with the types and acreage of habitat impacted (see Section 6.2), and to implement conservation measures specified by VHP conditions. Thus, all applicable VHP conditions (see Section 6.1) are considered part of the proposed project description.



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Ecological Consultants

Figure 1. Vicinity Map
Fisher Creek Basin Project Biological Resources Report (4454-01)
May 2021

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Figure 2. Fisher Basin Construction Activities Map
Fisher Creek Basin Project Biological Resources Report (4454-01)
May 2021

1.1.1 Site Access, Haul Route, and Staging Areas

The project proposes vehicular access from two locations. The first location is via an access road from Jarvis Drive to the northwest corner of the site (Photo 10, Appendix C). The second location is via a new extension from Sutter Boulevard to the easternmost corner of the site (Photo 3, Appendix C). Off-site portions of both access routes are already developed, with no natural habitat, and are not analyzed in this report.

The proposed haul route will travel from Jarvis Drive to Monterey Road to Cochrane Road. This would then utilize U.S. 101 to transport the material to its disposal site. Alternatively, the proposed project would use the new Sutter Boulevard extension and travel from Butterfield Boulevard to Cochrane Road to reach U.S. 101. No staging area is proposed.

Section 2. Methods

2.1 Background Review

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed the project description and maps provided by David J. Powers & Associates in April 2021; aerial images (Google Inc. 2021); a USGS topographic map; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB; CNDDB 2021); the City of Morgan Hill's Storm Drainage System Master Plan Final (City of Morgan Hill 2018); habitat and species information from the VHP (ICF International 2012); reports prepared by H. T. Harvey & Associates summarizing the results of preconstruction surveys for special-status species and nesting birds for the adjacent development projects; and other relevant reports, scientific literature, and technical databases.

In addition, for plants, we reviewed the CNDDB for all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the project region, which is defined as the *Morgan Hill* USGS 7.5-minute quadrangles and surrounding eight quadrangles (*San José East*, *Lick Observatory, Isabel Valley, Santa Teresa Hills, Mt. Sizer, Loma Prieta, Mt. Madonna,* and *Gilroy*). Quadrangle-level results are not maintained in the CNDDB for CRPR 3 and 4 species, so we also conducted a search of the CNPS Inventory records for these species occurring in the same nine quads (CNPS 2021a). We queried the CNDDB (2021) for natural communities of special concern that occur in the vicinity of the basin. We perused records of birds reported in nearby areas, such as at the Tilton Ranch Habitat Preserve to the northwest and along Coyote Creek to the north, on eBird (Cornell Lab of Ornithology 2021) and on the South-Bay-Birds Listserv (2021). Botanical nomenclature follows that of the Jepson Flora Project (2021).

2.2 Site Visits

Reconnaissance-level field surveys of the project site were conducted by H. T. Harvey & Associates plant ecologist Katie Gallagher, M.S. and wildlife ecologist Emily Malkauskas, B.S., on April 22, 2021. The purpose of these surveys was to provide an impact assessment specific to the proposed excavation of the basin as described above. Specifically, surveys were conducted to (1) assess existing biotic habitats and plant and animal communities within the project site, (2) assess the project site for its potential to support special-status species and their habitats, and (3) identify potential jurisdictional and sensitive habitats, such as waters of the U.S./state and riparian habitat.

Because the proposed project is a "covered project" under the approved VHP (ICF International 2012), VHP mapping of land cover types was referenced, though it was field-verified and modified as necessary based upon site conditions observed during the field survey. In addition, because the detention basin is mapped by the VHP as potentially suitable nesting habitat for the tricolored blackbird (*Agelaius tricolor*), E. Malkauskas conducted a habitat survey to determine whether any potential nesting substrate for tricolored blackbirds was present within

250 feet of the project site, per Condition 17 of the VHP. In addition, she conducted a focused survey for (1) suitable burrowing owl (*Athene cunicularia*) roosting and nesting habitat (i.e., burrows of California ground squirrels [*Otospermophilus beecheyi*]) within 250 feet of the project site, (2) evidence of previous raptor nesting activity (i.e., large stick nests), (3) potential bat roosting habitat, and (4) nests of the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*).

A tree survey and assessment was conducted by Live Oak Associates, Inc. on October 23, 2020 and January 12, 2021 within the basin where potential impacts on trees could potentially occur. The results of the survey and assessment are included in an appendix to this report (Appendix A).

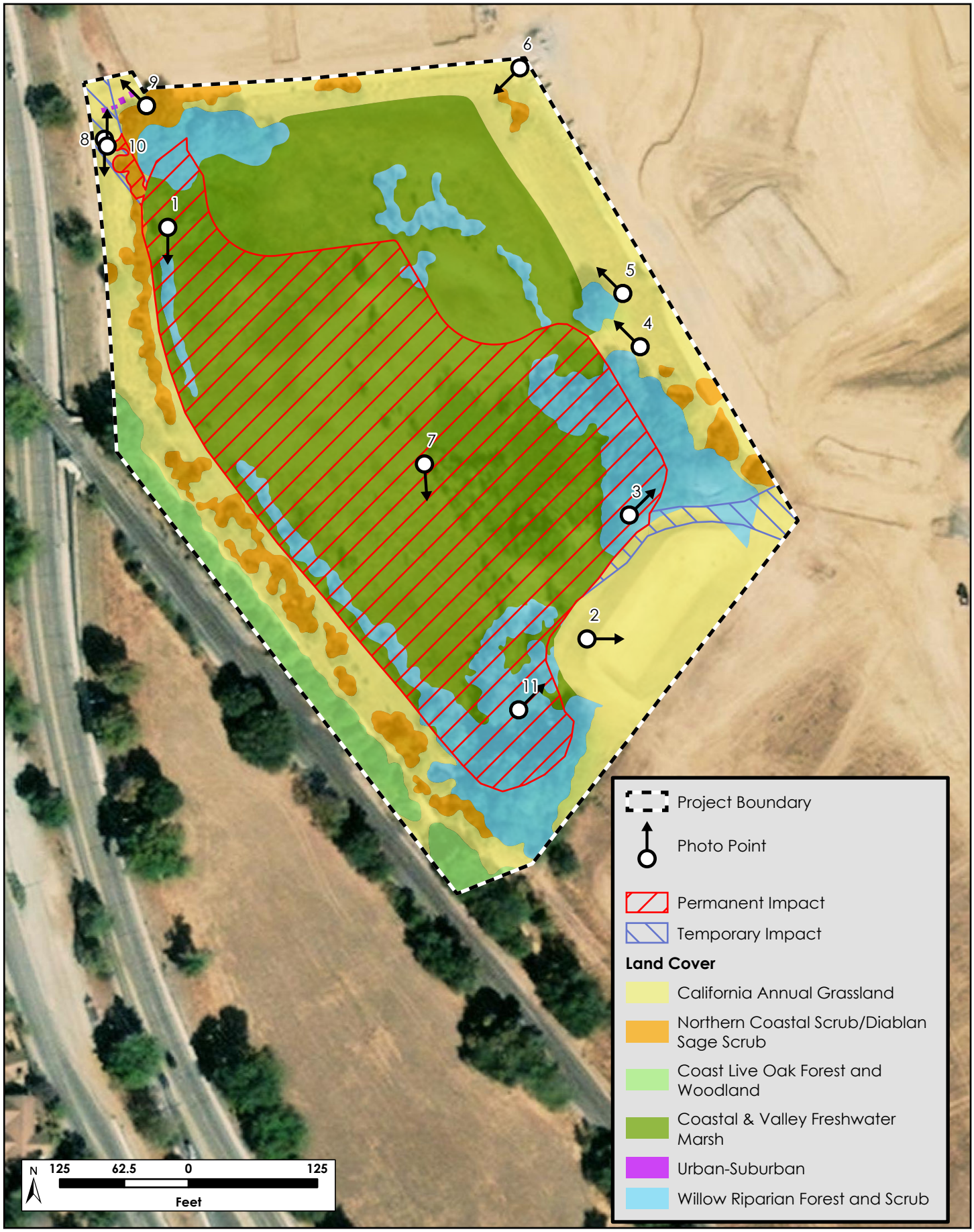

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Figure 3. Impact Area and Land Cover Type
Fisher Creek Basin Project Biological Resources Report (4454-01)
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Section 3. Regulatory Setting

Biological resources within the project site are regulated by a number of federal, state, and local laws and ordinances, as described below.

3.1 Federal Regulations

3.1.1 Clean Water Act

The Clean Water Act (CWA) functions to maintain and restore the physical, chemical, and biological integrity of Waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, U. S. Army Corps of Engineers (USACE) jurisdiction under Section 404 of the CWA extends to the Ordinary High Water Mark (OHWM), which is defined in Title 33, Code of Federal Regulations, Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHWM to the outer edges of the wetlands. Wetlands that are not adjacent to Waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, may be subject to USACE jurisdiction. In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line. The high tide line is defined in 33 Code of Federal Regulations Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide." If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHWM or high tide line to the outer edges of the wetlands.

On June 23, 2020, the Navigable Waters Protection Rule went into effect. This Rule clarifies that federal waters do not include ephemeral streams or features adjacent to such features. Ephemeral streams have no connection to groundwater and only convey flows during and shortly after precipitation events. They do not include intermittent streams with a seasonal connection to groundwater and seasonal flows that persist for several days or more following rain events or persist between winter storms.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of Section 401 Water Quality Certification. The State Water Resources Control Board (SWRCB) is the state agency (together with the Regional Water Quality Control Boards [RWQCBs]) charged with implementing water quality certification in California.

<u>Project Applicability</u>: The wetland habitat in the Fisher Creek Basin is expected to be considered three-parameter wetlands based on the presence of obligate hydrophytic vegetation and direct observations of hydrology (i.e., flowing surface water, and seasonal inundation) (USACE 2008). While a jurisdictional delineation was not conducted to determine if hydric soils (as a third parameter) are present, they are likely to

occur based on the presence of strong obligate hydrophytic vegetation and clear hydrology. Therefore, we expect that a Section 404 permit from the USACE would be necessary to authorize the project's proposed impacts on wetlands.

3.1.2 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or *take*, which is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." *Take* can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as *take* even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under FESA, but may become listed in the near future and are often included in their review of a project.

Project Applicability: No federally listed or candidate plant species occur within the basin. There is some potential (albeit low) for the monarch butterfly (*Danaus plexippus*), a federal candidate species, to occur on the site for occasional nectaring and/or breeding. Therefore, monarchs may be affected by the proposed project (in the absence of avoidance and minimization measures). However, this species is not listed as threatened or endangered and therefore has no statutory protection under FESA.

3.1.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from the NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS.

Project Applicability: No fish occur within the basin, as the basin is only seasonally wet, and water diversion structures between the basin and the mainstem of Fisher Creek preclude the ability of fish to enter the basin. Therefore, no EFH is present on the project site.

3.1.4 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA

protects whole birds, parts of birds, and bird eggs and nests; and prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the Department of the Interior in its April 16, 2003 Migratory Bird Permit Memorandum. Nest starts (nests that are under construction and do not yet contain eggs) are not protected from destruction.

Project Applicability: All native bird species that occur in the project area are protected under the MBTA.

3.2 State Regulations

3.2.1 Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and Porter-Cologne. Porter-Cologne broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director has stated that, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs to impact.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that a proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the state require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Project Applicability: Waters of the State include all potential waters of the U.S. The RWQCB would likely also consider the riparian vegetation located below the top of the bank of the basin (i.e., willow riparian forest and scrub land cover type) to be important buffers to Waters of the State associated with the basin (Figure 3). Therefore, we expect that a Section 401 water quality certification from the RWQCB would be necessary to authorize the project's proposed impacts on wetlands and riparian buffers regulated by the RWQCB.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in *take* of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of *take* under the California Fish and Game Code. The CDFW, however, has interpreted *take* to include the "killing of a member of a species which is the proximate result of habitat modification."

Project Applicability: No suitable habitat for any state-listed plant or animal species occurs in the project site, and thus no state-listed plants or animals are reasonably expected to occur in the project area.

3.2.3 California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists." Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their

populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Section 15380(b).

The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the CNPS Inventory of Rare and Endangered Plants (CNPS 2021a). The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

- CRPR 1A Plants considered extinct.
- CRPR 1B Plants rare, threatened, or endangered in California and elsewhere.
- CRPR 2A Plants considered extinct in California but more common elsewhere.
- CRPR 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- CRPR 3 Plants about which more information is needed - review list.
- CRPR 4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

- .1—seriously endangered in California;
- .2—fairly endangered in California;
- .3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and adverse effects to these species may be considered significant. Impacts on plants that are listed by the CNPS on CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of natural communities of special concern, in addition to plant and wildlife species. Vegetation types of "special concern" are tracked in Rarefind (CNDDB 2020). Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings are a reflection of the condition of a habitat within California. If an alliance is marked as a G1–G3, all of the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program's currently accepted list of vegetation alliances and associations (CDFW 2020).

Project Applicability: All potential impacts on biological resources will be considered during CEQA review of the project in the context of this biological resources report.

3.2.4 California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code Section 2786 defines *riparian habitat* as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, CDFW regulates any project proposed by any person that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds." California Fish and Game Code Section 1602 requires an entity to notify CDFW of any proposed activity that may modify a river, stream, or lake. If CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Certain sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered *take* by the CDFW. Raptors (e.g., eagles, hawks, and owls) and their nests are specifically protected in California under Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered *take* by the CDFW.

Project Applicability: The basin lacks natural hydrological connectivity to natural riverine systems, both upstream (i.e., no streams flow into the basin) and downstream (because water needs to be pumped from the basin into pipes that eventually lead to Fisher Creek). Nevertheless, on previous projects, CDFW has claimed jurisdiction over off-stream detention basins that ultimately discharge into jurisdictional waterways. Therefore, CDFW jurisdiction under Section 1602 of the California Fish and Game Code could extend up to the top of the bank of the basin. If so, an LSAA from CDFW would be necessary to authorize the project's proposed impacts.

Most native bird, mammal, and other wildlife species that occur within the project site and in the immediate vicinity are protected by the California Fish and Game Code. State Water Resources Control Board Stormwater Regulation

Construction Phase. Construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with state requirements to control the discharge of stormwater pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009-DWQ, as amended and administratively extended). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of Best Management Practices (BMPs) to protect water quality until the site is stabilized.

Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors. Additionally, the Construction General Permit does not extend coverage to projects if stormwater discharge-related activities are likely to jeopardize the continued existence, or result in take of any federally listed endangered or threatened species.

Post Construction Phase. In many Bay Area counties, including Santa Clara County, projects must also comply with the California RWQCB, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit (Water Board Order No. R2-2015-0049, as amended). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design that prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site. In order to meet

these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

Project Applicability. The project will comply with the requirements of the NPDES permit; therefore, construction phase activities would not result in detrimental water quality effects upon biological/regulated resources.

3.3 Local Regulations

The basin is located within the limits of the City of Morgan Hill. Applicable City ordinances and policies are discussed below.

3.3.1 City of Morgan Hill Tree Ordinance

The City of Morgan Hill, in Section 12.32.030 of the Municipal Code, defines the Tree Removal Permit Process required prior to the removal by cutting down, poisoning, killing, destroying, or otherwise the removal of any tree or community of trees:

- Existing trees rising above the ground with a single stem or trunk of a circumference of 40 inches or more for nonindigenous species and 18 inches or more for indigenous species (native to Morgan Hill region, including oaks, California bay, madrone, sycamore, and alder) measured at four and one-half feet vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes (all commercial tree farms, nonindigenous species in residential zones, and orchards (including individual fruit trees) are exempted; or
- Trees of any size within the public right-of-way; or
- Trees that are important to the historical or visual aspect of Morgan Hill.

To remove any trees that meet the above conditions, a tree removal permit must be secured from the City of Morgan Hill. The application for a tree removal permit must include: diameter and height of tree, type of tree, map of location of tree, method of marking the tree, description of method used to remove the tree, description of tree planting or replacement program, reason proposed for removing the tree, address where tree is located, general health of tree to be removed, and any other pertinent information that the community development director may require.

Project Applicability: Ordinance-sized trees are present in the basin. A tree survey in this area (see Appendix A) was conducted for the purpose of (1) identifying any trees that may potentially need to be trimmed or removed for some portion of project implementation, and (2) siting project activities to minimize tree impacts. The project will comply with the City of Morgan Hill's policies for any trees that need to be removed.

3.3.2 Santa Clara Valley Habitat Plan

The VHP (ICF International 2012) provides a framework for promoting the protection and recovery of natural resources, including endangered and threatened species, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. The VHP allows the County of Santa Clara, Santa Clara Valley Water District, the Santa Clara Valley Transportation Authority, and the cities of Gilroy, Morgan Hill, and San José (collectively, the Local Partners or Permittees) to receive endangered species permits for activities and projects they conduct and those under their jurisdiction. The Santa Clara Valley Open Space Authority also contributed to VHP preparation. The VHP will protect, enhance, and restore natural resources in specific areas of Santa Clara County and contribute to the recovery of endangered species. Rather than separately permitting and mitigating individual projects, the VHP evaluates natural-resource impacts and mitigation requirements comprehensively in a way that is more efficient and effective for at-risk species and their essential habitats.

The VHP was developed in association with the USFWS and CDFW and in consultation with stakeholder groups and the general public. The USFWS has issued the Permittees a 50-year permit that authorizes incidental take of listed species under FESA, while CDFW has issued a 50-year permit that authorizes take of all covered species under the Natural Community Conservation Planning Act. This approach allows the Permittees to streamline future mitigation requirements into one comprehensive program. In addition to obtaining take authorization for each participating agency's respective activities, the cities and County will be able to extend take authorization to project applicants under their jurisdiction.

The USFWS and CDFW will also provide assurances to the Permittees that no further commitments of funds, land, or water will be required to address impacts on covered species beyond that described in the VHP to address changed circumstances. In addition to strengthening local control over land use and species protection, the VHP provides a more efficient process for protecting natural resources by creating new habitat reserves that will be larger in scale, more ecologically valuable, and easier to manage than the individual mitigation sites created under the current approach.

The VHP and associated documents are approved and adopted by the six Local Partners (Cities of Gilroy, Morgan Hill and San José, County of Santa Clara, Santa Clara Valley Transportation Authority, and Valley Water).

Project Applicability. The project site is located within the VHP permit area, and project activities are considered covered under the VHP and will comply with VHP conditions (ICF International 2012).

Section 4. Environmental Setting

4.1 General Project Area Description

The basin is located in the City of Morgan Hill in Santa Clara County, California (Figure 1). The climate in the project vicinity is coastal Mediterranean, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Climate conditions in the vicinity include a 30-year average of approximately 23.3 inches of annual precipitation with a monthly average temperature range from 46.6ºF to 73.0ºF (PRISM Climate Group 2021). The basin's elevation is at 345 feet above mean sea level (Google Inc. 2021). The Natural Resource Conservation Service (NRCS) has mapped two soil units in the vicinity of the basin: San Ysidro loam, 0–2% slopes, and Pleasanton loam, 0–2% slopes (NRCS 2021). Both soil units are found on valley floors and are composed of alluvium derived from sedimentary rock. These two soils are not considered "hydric" soils (NRCS 2021).

4.2 Hydrological Connectivity

Three inlets direct storm flows into the basin. One is an 84-inch storm drain in the easternmost corner and another is a 24-inch storm drain adjacent to the first. The third, in the southernmost corner, is fed by a 24-inch storm drain and an 18-inch storm drain. All storm drains are fed by sheet flow from adjacent upland areas. The only outlet for water in the basin is via a pump in the northwesternmost corner. This pump is up high on the bank, and is intended to be used when the basin fills during large or successive storm events. The pump moves water through underground pipes and a flapgate, and this effluent eventually flows into the headwaters of Fisher Creek. Because the basin was constructed in uplands, it is not considered a part of Fisher Creek.

4.3 Land Cover

As described above, biotic habitats in the basin were classified according to the land cover classification system described in the VHP (ICF International 2012), with modifications based upon site conditions verified during the 2021 field survey. The boundaries of land cover types in this report were mapped by Live Oak Associates, Inc. on October 20, 2020 and field verified during H. T. Harvey's April 22, 2021 survey. The reconnaissance-level survey identified six land cover types in or around the basin: California annual grassland, northern coastal scrub/Diablan sage scrub, coast live oak forest and woodland, coastal and valley freshwater marsh, urban-suburban (i.e., developed/landscaped), and willow riparian forest and scrub (Figure 3). These land cover types are described in detail below. Plant species observed during all biological surveys are listed in Appendix C.

4.3.1 California Annual Grassland

Vegetation. California annual grassland habitat in the basin is present mostly on the bank slopes and at the top of the banks (Photo 5, Appendix C). This habitat type is dominated by non-native annual grasses such as ripgut brome (*Bromus diandrus*), and wild oat (*Avena barbata*), and weedy forbs such as common plantain (*Plantago*

lanceolata), beaked hawksbeard (*Crepis vesicaria*), and common vetch (*Vicia sativa*). This land cover type includes some native species such as blue dicks (*Dipterostemon capitata*). One individual of narrow leaf milkweed (*Asclepias fascicularis*) was observed on the southwestern bank.

Wildlife. Wildlife use of grasslands within the project site is limited by human disturbance, the limited extent of the grassland area, and the isolation of this habitat from more extensive grasslands in the region (i.e., east of U.S. Route 101 and west of Monterey Road). As a result, some of the wildlife species associated with extensive grasslands in the South Bay, such as the grasshopper sparrow (*Ammodramus savannarum*), are absent from the grasslands within the project site. Many of the wildlife species that occur in the grassland areas within the project site occur primarily in nearby developed or riparian areas and use the grasslands within the project site for foraging. Such species include the house finch (*Haemorhous mexicanus*), bushtit (*Psaltriparus minimus*), and lesser goldfinch (*Spinus psaltria*), which forage on seeds in grassland areas, and the black phoebe (*Sayornis nigricans*), cliff swallow (*Petrochelidon pyrrhonota*), and Mexican free-tailed bat (*Tadarida brasiliensis*), which forage aerially over grassland habitats for insects.

Burrows of Botta's pocket gophers (*Thomomys bottae*) were observed within the project site along the sides of the detention basin. This fossorial mammal species is an important component of grassland communities, providing a prey base for diurnal raptors and terrestrial predators. Other rodent species that can potentially occur in the grassland habitat within the project site include the California vole (*Microtus californicus*) and deer mouse (*Peromyscus maniculatus*). California ground squirrels could also occur on the site, though no burrows of ground squirrels were detected on the site during the reconnaissance survey. Diurnal raptors such as red-tailed hawks (*Buteo jamaicensis*) and red-shouldered hawks (*Buteo lineatus*) forage for these small mammals over grasslands during the day, and at night nocturnal raptors such as barn owls (*Tyto alba*) will forage for nocturnal rodents, such as deer mice.

Several reptile species regularly occur in grassland habitats, including the western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), and southern alligator lizard (*Elgaria multicarinata*). Burrows of Botta's pocket gophers provide refuges for these reptile species, as well as for common amphibians that may occur in adjacent marsh habitat such as the western toad (*Anaxyrus boreas*) and Pacific tree frog (*Hyliola regilla*). Mammals such as the native striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and black-tailed jackrabbit (*Lepus californicus*), as well as the nonnative Virginia opossum (*Didelphis virginiana*) and feral cat (*Felis catus*), use grassland habitats within the project site for foraging.

4.3.2 Northern Coastal Scrub/Diablan Sage Scrub

Vegetation. The banks within the basin contain patchy clusters of coyote brush (*Baccharis pilularis*) and were mapped as northern coastal scrub/Diablan sage scrub. While dominated by coyote brush, this land cover type most closely meets the criteria of northern coastal scrub as it is defined in the VHP and through subsequent plan guidance (ICF International 2012, SCVHA 2017). The understory is dominated by those species commonly found in California annual grassland. Coyote brush is drought deciduous and frequently retains dead woody stems among live vegetated stems. (Photo 8, Appendix C).

Wildlife. Despite the relatively small and fragmented nature of the northern coastal scrub/Diablan sage scrub habitat on the site, this land cover type supports many of the common species that occur in the region, including several of those described in the California annual grassland land cover type above. Such species include the California scrub-jay (*Aphelocoma californica*), bushtit, Bewick's wren (*Thryomanes bewickii*), and Anna's hummingbird (*Calypte anna*). Mammal species that may occur in this habitat include the California mouse (*Peromyscus californicus*), striped skunk, and brush rabbit (*Sylvilagus bachmani*). Suitable habitat for San Francisco dusky-footed woodrats also occurs in this habitat, but no nests were observed during the reconnaissance survey and this species is thus determined to be absent. Reptiles in this habitat include the gopher snake, southern alligator lizard, and western fence lizard.

4.3.3 Coast Live Oak Forest and Woodland

Vegetation. The top of the southwestern bank between the user trail and the railroad tracks contains a line of coast live oak trees (*Quercus agrifolia*). Based on their location at the top of the bank and their linear arrangement, these were likely planted after the basin was constructed. While a human-sourced population of coast live oak trees do contain good habitat value, their low genetic diversity can limit factors such as climate sustainability compared to natural populations.

Wildlife. The coast live oak forest and woodland habitat that is found along the southwestern bank of the detention basin provides suitable nesting habitat for a variety of common bird species such as the California scrub-jay, American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), lesser goldfinch, and bushtit. The red-shouldered hawk and Cooper's hawk (*Accipiter cooperii*) may use larger trees within this habitat area for nesting. However, no raptor nests (either old nests or nests currently in use) were detected within the coast live oak forest and woodland habitat during the reconnaissance survey. Additional wildlife species that are common within coast live oak woodland areas in urban settings include the striped skunk and raccoon, and the non-native Virginia opossum and eastern gray squirrel (*Sciurus carolinensis*), all of which may use the trees for roosting, foraging, and nesting opportunities. Individual bats may be attracted to these areas to roost in trees. However, examination of the trees within the project site failed to find any large cavities that might provide suitable habitat for a large roosting or maternity colony of bats.

4.3.4 Coastal and Valley Freshwater Marsh

Vegetation. The bottom of the basin holds water for a sufficient duration (i.e., weeks to months, depending on precipitation levels) during the growing season in most years to support vegetation typically associated with freshwater marshes. While there is no one species that dominates this habitat on this site, a suite of herbaceous species inhabits the basin bottom in a patchwork mosaic of across this habitat type. A few of the more common native species include common spikerush (*Eleocharis macrostachya*), toad rush (*Juncus bufonius*), wavy-stemmed popcornflower (*Plagiobothrys undulatus*), hardstem bulrush (*Schoenoplectus acutus*), hairy pepperwort (*Marsilea vestita*), aquatic pygmy weed (*Crassula aquatica*), and broadleaf cattail (*Typha latifolia*). Only a few non-native species were observed growing in the marsh habitat, including kikuyu grass (*Pennisetum clandestinum*), spotted

knotweed (*Persicaria maculosa*), and lanceleaf water plantain (*Alisma lanceolatum*). Sparse sandbar willow (*Salix exigua*) and arroyo willow (*Salix lasiolepis*) dot the basin bottom within the marsh but do not dominate the habitat.

The boundary of the coastal and valley freshwater marsh includes a narrow band (i.e., roughly 3-6 feet in width) of transitional habitat immediately above the toe of the slopes (Photos 1 and 6, Appendix C). Common native herbaceous species within this band include slender wooly marbles (*Psilocarphus tenellus*), slender willowherb (*Epilobium ciliatum*), tall nutsedge (*Cyperus eragrostis*), hairy speedwell (*Veronica peregrina* subsp. *xalapensis*), and bog yellowcress (*Rorippa palustris* subsp. *palustris*). Common non-native herbaceous species include rabbitsfoot grass (*Polypogon monspeliensis*), cutleaf plantain (*Plantago coronopus*), and Italian rye grass (*Festuca perennis*). Sandbar willows occur in denser clusters than on the basin bottom.

Wildlife. Freshwater marshes often provide habitat for a distinctive suite of wetland-associated wildlife species. However, the small size and patchy distribution of the freshwater marsh habitat on the project site, coupled with its seasonal hydrology, reduces its quality for many wetland-associated wildlife species. Amphibians such as the native Pacific tree frog and western toad inhabit this wetland when water is present. Avian species that nest and forage in adjacent northern coastal scrub/Diablan sage scrub and oak woodland habitats will forage in these wetlands. Common wetland-associated birds, such as the song sparrow (*Melospiza melodia*), red-winged blackbird (*Agelaius phoeniceus*), and common yellowthroat (*Geothlypis trichas*), nest and forage within these wetlands, but the small patches of emergent vegetation do not support nesting habitat for tricolored blackbirds, which typically require more extensive habitats for nesting. Waterbirds such as the mallard (*Anas platyrhynchos*) and American coot (*Fulica americana*) forage in these wetlands when sufficient water levels are present.

4.3.5 Urban-Suburban

Vegetation. This land cover consists only of concrete infrastructure associated with the overflow pump and does not contain any vegetation or habitat value (Photo 9, Appendix C).

Wildlife. The urban-suburban areas within the project site serve as wildlife habitat only in a very limited capacity, and given the very limited extent of this land cover type, any wildlife occurring in or around the concrete infrastructure would consist of species using the adjacent California annual grassland and northern coastal scrub/Diablan sage scrub.

4.3.6 Willow Riparian Forest and Scrub

Vegetation. Willow riparian forest and scrub habitat was mapped primarily around the edges of the basin bottom where soil is moist but well-drained. It is dominated by sandbar willows and arroyo willows. One mature Fremont cottonwood (*Populus fremontii*) tree that is rooted by an exposed underground corrugated pipe is also included in this land use type (Photo 4, Appendix C). Sandbar willows and arroyo willows that are not clustered and only occur sparsely among wetland herbaceous vegetation are not included in this classification and, instead, are included in the coastal and valley freshwater marsh vegetation type. The herbaceous vegetation below the willows typically depends on the density of the willow stand. If the stand is less dense relative to other willow

stands onsite, then the understory is likely to be composed of a suite of species similar to coastal and valley freshwater marsh or the transitional habitat just above the toe of the slopes. A very dense willow stand typically has an understory dominated by leaf litter, as shown in Photo 11, Appendix C.

Wildlife. Riparian habitats in California generally support exceptionally rich animal communities and contribute a disproportionately high amount to landscape-level species diversity. In addition to providing breeding, foraging, and roosting habitat for a diverse array of animals, riparian communities typically provide movement corridors for some species, connecting a variety of habitats throughout a region. Riparian habitats in the region (e.g., along Coyote Creek and Fisher Creek) are generally of high value to wildlife, particularly to those species that are tolerant of or associated with the adjacent developed/landscaped areas and grasslands.

However, the riparian habitat within the detention basin on the project site is somewhat sparse, and provides lower-quality habitat compared to nearby riparian habitats that are characterized by dense, continuous trees and understory vegetation. Resident bird species that nest and forage in this habitat include the song sparrow, lesser goldfinch, Anna's hummingbird, Bewick's wren, and bushtit. Swallows forage for insects over riparian habitat on the project site.

No nests of raptors (e.g., hawks, owls, and falcons) were observed in riparian trees within the project site or in immediately adjacent areas during the reconnaissance-level survey. However, larger trees in the riparian habitat, especially those with dense foliage that provide concealment from nearby human activity along Monterey Road, provide potential nesting sites for common raptors such as red-shouldered hawks, Cooper's hawks, and red-tailed hawks.

In addition to permanent resident and breeding birds, a number of migratory and wintering species occur in the site's riparian habitat, including species of warblers, vireos, flycatchers, and sparrows. During migration, willow and cottonwood trees provide high-quality foraging habitat for these migrants. Although most of these trees are deciduous, and thus provide poor cover in winter, they still support fairly large numbers of foraging birds during this season. Migrant songbirds, such as the yellow warbler (*Setophaga petechia*), Wilson's warbler (*Cardellina pusilla*), orange-crowned warbler (*Oreothlypis celata*), western tanager (*Piranga ludoviciana*), Pacific-slope flycatcher (*Empidonax difficilis*), and warbling vireo (*Vireo gilvus*), forage on insects in trees and shrubs during spring and fall migration. Several other species, including the ruby-crowned kinglet (*Regulus calendula*), yellow-rumped warbler (*Setophaga coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), and golden-crowned sparrow (*Zonotrichia atricapilla*), occur as both migrants and winter residents.

Garter snakes (*Thamnophis* spp.) and gopher snakes will forage for insects and amphibians in this riparian habitat, and western fence lizards will also forage for insects. Amphibians such as the native Pacific tree frog will occur in the leaf litter in this habitat. Urban-adapted mammals, such as the native raccoon and striped skunk, as well as the non-native Virginia opossum, Norway rat, black rat (*Rattus rattus*), and eastern gray squirrel, reside in riparian habitat and adjacent habitats on the project site. Nonnative feral cats occur within this habitat as well. No cavities large enough to support colonies of roosting bats were observed within the trees in this habitat

type, although small numbers of individual bats may roost in small cavities and crevices in trees within and adjacent to the site.

Section 5. Special-Status Species and Sensitive Habitats

CEQA requires assessment of the effects of a project on species that are protected by state, federal, or local governments as "threatened, rare, or endangered"; such species are typically described as "special-status species." For the purpose of the environmental review of the project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described in Section 3 above.

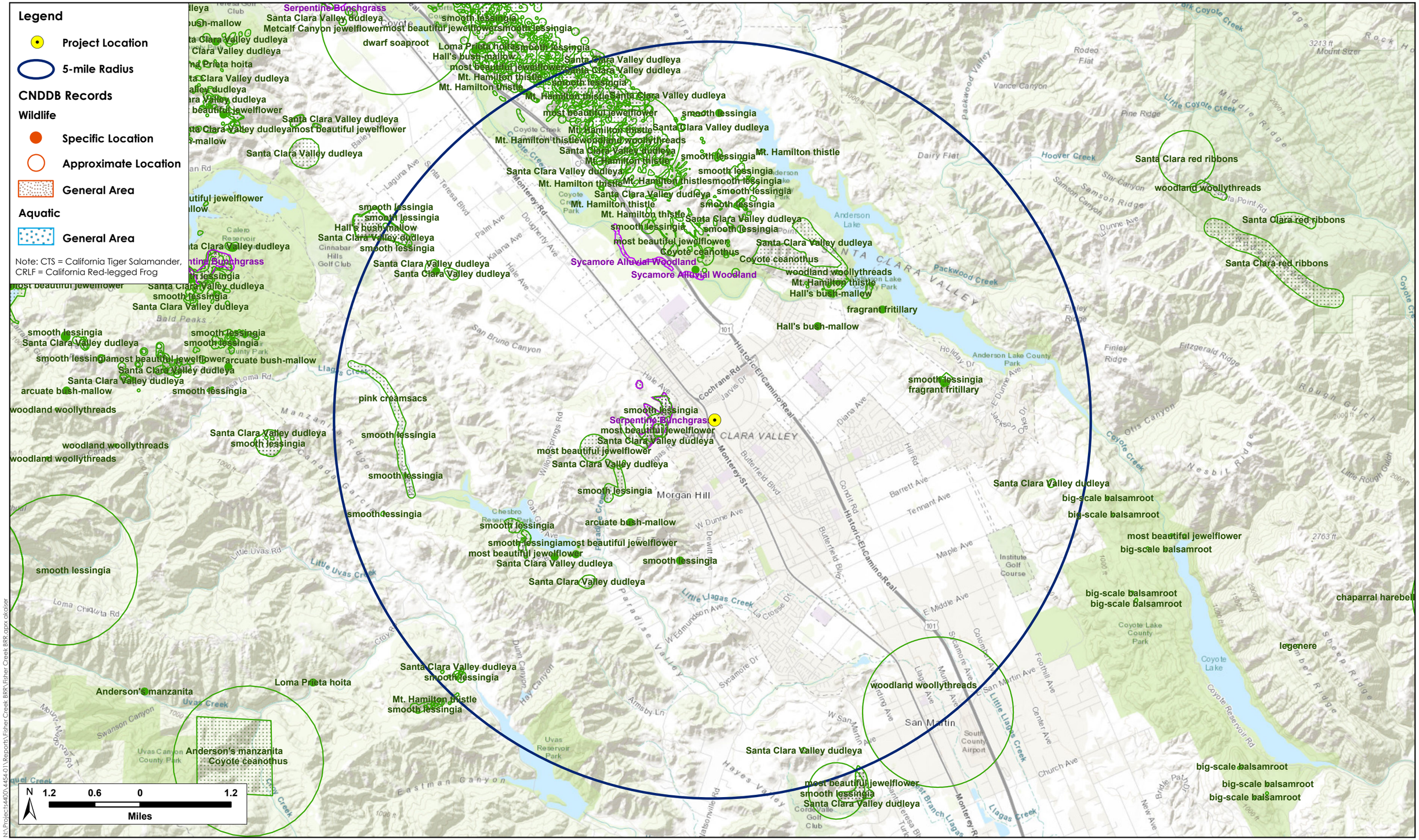
For purposes of this analysis, "special-status" plants are considered plant species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4 (CNPS 2021a).

For purposes of this analysis, "special-status" animals are considered animal species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Information concerning threatened, endangered, and other special-status species that potentially occur in the basin was collected from several sources and reviewed by H. T. Harvey & Associates biologists as described in Section 2.1 above. Figure 4 depicts CNDDB records of special-status plant species in the general vicinity of the project site and Figure 5 depicts CNDDB records of special-status animal species. These generalized maps show areas where special-status species are known to occur or have occurred historically.



H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 4. CNDDB-Mapped Records of Special-Status Plants

Fisher Creek Basin Project Biological Resources Report (4454-01)
May 2021

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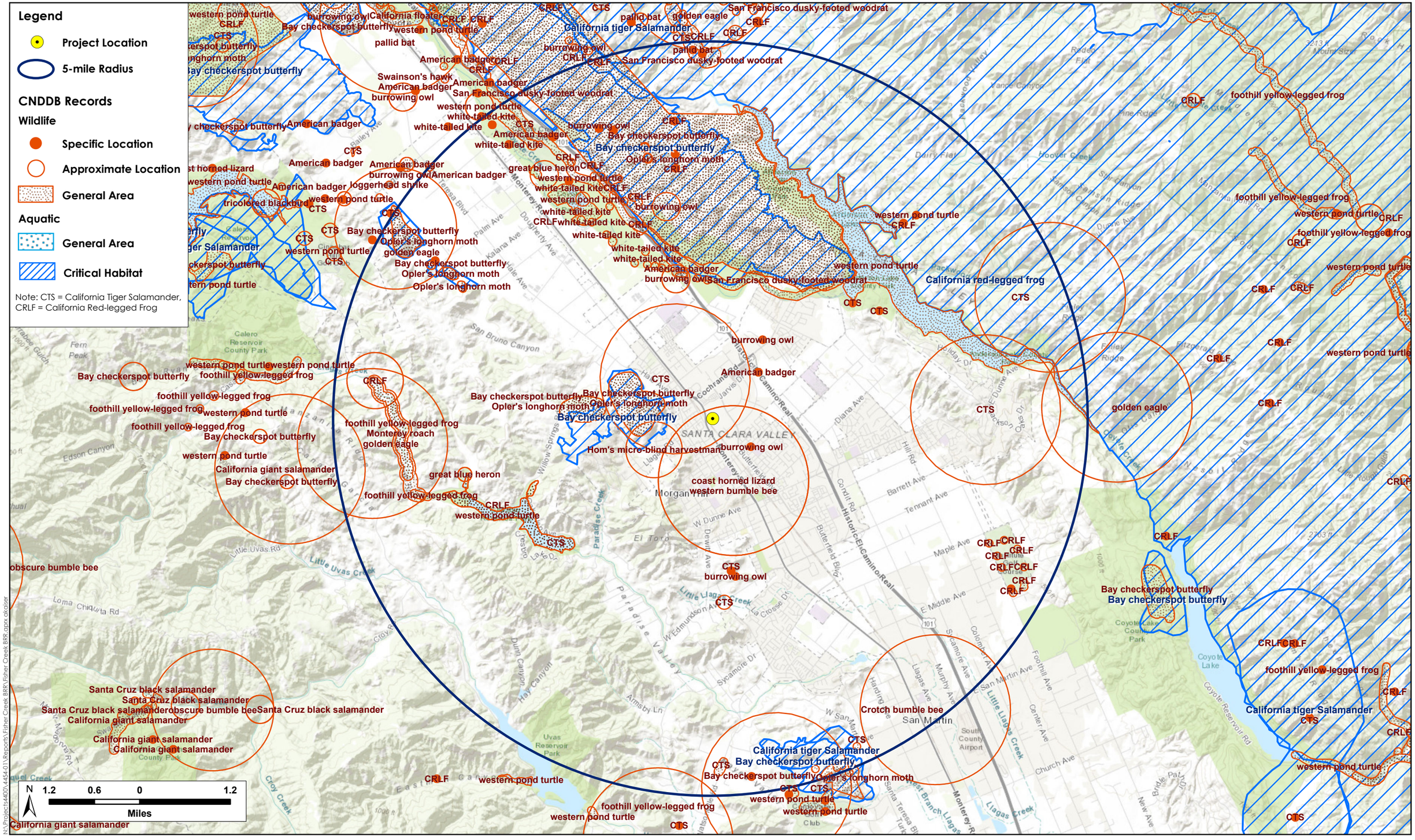

Figure 5. CNDDB-Mapped Records of Special-Status Animals

Fisher Creek Basin Project Biological Resources Report (4454-01)
May 2021

5.1 Special-Status Plant Species

The CNPS (2021a) and CNDDB (2021) identify 33 special-status plant species (i.e., CRPR) as potentially occurring in at least one of the nine USGS 7.5-minute quadrangles containing or surrounding the basin. All of these special-status plant species were determined to be absent from the basin for at least one of the following reasons: (1) absence of suitable habitat types; (2) lack of specific microhabitat or edaphic requirements, such as serpentine soils; (3) the elevation range of the species is outside of the range of the basin; and/or (4) the species is presumed extirpated from the project region. The basin is an engineered facility and contains no original soil surfaces, rendering the possibility of a remnant rare plant population unlikely. The basin is fed by sheet flows and storm drain runoff from developed areas, rendering the possibility of a rare plant arriving onsite via stormwater also unlikely.

5.2 Special-Status Animal Species

The legal status and likelihood of occurrence within the project site of special-status animal species known to occur, or potentially occurring, in the surrounding region are presented in Table 1. Most of the special-status species listed in Table 1 are not expected to occur within the project site because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat.

The following special-status species that are present in less urbanized settings in the South Bay, or in specialized habitats in the South Bay, are absent from the project site due to a lack of suitable habitat and/or isolation of the site from populations by urbanization: the Bay checkerspot butterfly (*Euphydryas editha bayensis*), Central California Coast steelhead (*Oncorhynchus mykiss*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), Swainson's hawk (*Buteo swainsoni*), bald eagle (*Haliaeetus leucocephalus*), least Bell's vireo (*Vireo bellii pusillus*), San Joaquin kit fox (*Vulpes macrotis mutica*), Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*), Pacific lamprey (*Entosphenus tridentatus*), Central California roach (*Lavinia symmetricus symmetricus*), Sacramento hitch (*Lavinia exilicauda exilicauda*), riffle sculpin (*Cottus gulosus*), western pond turtle (*Actinemys marmorata*), burrowing owl (*Athene cunicularia*), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), American badger (*Taxidea taxus*), and golden eagle (*Aquila chrysaetos*). While some of the birds in this list likely fly over the project area at times, none are expected to nest in, or make regular/heavy use of, any resources within the project site. No nests of San Francisco dusky-footed woodrats were observed within or adjacent to the project site during the focused survey on April 22, 2021, and this species is also determined to be absent from these areas.

Table 1. Special-status Animal Species, Their Status, and Potential Occurrence within the Project Site

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Federal or State Endangered, Threatened, or Candidate Species			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT, VHP	Native grasslands on serpentine soils. Larval host plants are *Plantago erecta* and/or *Castilleja exserta* or *C. densiflora*.	**Absent.** No suitable native grasslands, serpentine soils, or larval host plants to support this species were identified within the project site during the reconnaissance-level survey, and the VHP does not map suitable habitat within the project site (ICF International 2012). Determined to be absent.
Monarch butterfly (*Danaus plexippus*)	FC	Requires milkweeds (*Asclepias* spp.) for egg-laying and larval development, but adults obtain nectar from a wide variety of flowering plants in many habitats. Individuals congregate in winter roosts, primarily in Mexico and in widely scattered locations on the central and southern California coast.	**May be Present.** The monarch butterfly occurs within the project site primarily as a migrant, and small numbers may nectar on flowers in the project site. One narrow leaf milkweed plant was found on the project site during the April 22, 2021 reconnaissance survey, suggesting the possibility that this species could breed on the site, although breeding is unlikely given the paucity of host plants within and surrounding the project site. No current or historical overwintering sites are known as far inland as the project site, and therefore this species does not form wintering congregations on the site.
Crotch bumble bee (*Bombus crotchii*)	SC	Open grassland and scrub habitats.	**Absent.** Although the species was historically found throughout the southern two-thirds of California, including the Project vicinity, it is not expected to occur on the site due to recent range contractions. Determined to be absent.
Western bumble bee (*Bombus occidentalis*)	SC	Meadows and grasslands with abundant floral resources.	**Absent.** Although the species was historically found throughout much of central and northern California, including the Project vicinity, it is not expected to occur on the site due to recent range contractions. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Central California Coast steelhead (*Oncorhynchus mykiss*)	FT	Typically spawns in gravel substrates in clear, cool, perennial sections of relatively undisturbed streams with conditions allowing migration between spawning and marine habitats and dense canopy cover that provides shade, woody debris, and organic matter. Usually cannot survive long in pools or streams with water temperatures above 70°F; however, they can use warmer habitats if adequate food is available.	**Absent.** Although steelhead are known to occur nearby in Coyote Creek, the project site is not directly connected to any creeks and is therefore not accessible to this species. Determined to be absent.
California tiger salamander (*Ambystoma californiense*)	FT, ST, VHP	Preferred breeding habitat consists of temporarily (a minimum of 3–4 months) ponded environments (e.g., vernal pools, ephemeral pools, or human-made ponds) surrounded by grasslands or open woodlands where small mammal burrows are present. Will also utilize permanent ponds if aquatic vertebrate predators are not present. Suitable ponds provide breeding and larval habitat, while burrows of small mammals such as California ground squirrels and Botta's pocket gophers in upland habitats provide refugia for juvenile and adult salamanders during the dry season.	**Absent.** Suitable breeding habitat is likely absent from the project site, except in wetter years when the basin holds water at least through May, and no designated critical habitat occurs within or adjacent to the site (USFWS 2005). The closest known breeding locations are within a stock pond situated in grazed open space land approximately 1.94 miles to the south, near Chesbro Reservoir approximately 2.5 miles to the west, and within suitable habitat areas adjacent to Coyote Creek and Anderson Reservoir approximately 2.6 miles to the east (CNDDB 2021). An additional record of one adult tiger salamander collected from Coyote Creek at Madrone is listed as extirpated on the CNDDB (2021). Further, U.S. Route 101, Monterey Road, and development surrounding the project site provide barriers to dispersal from the nearest known breeding locations. The VHP maps potential breeding habitat within the project site and secondary habitat in the surrounding grassland areas to the east and west of the detention basin (ICF International 2012). However, the detention basin does not maintain a hydroperiod long enough to support successful breeding in most years. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
California red-legged frog (*Rana draytonii*)	FT, CSSC, VHP	Inhabit perennial freshwater pools, streams, and ponds throughout the Central California Coast Range as well as isolated portions of the western slopes of the Sierra Nevada (Fellers 2005). Preferred breeding habitat consists of deep perennial pools with emergent vegetation for attaching egg clusters (Fellers 2005), as well as shallow benches to act as nurseries for juveniles (Jennings and Hayes 1994). Nonbreeding frogs may be found adjacent to streams and ponds in grasslands and woodlands, and may travel up to 2 miles from their breeding locations across a variety of upland habitats (Bulger et al. 2003, Fellers and Kleeman 2007).	**Absent.** Although the VHP maps suitable breeding habitat for California red-legged frogs on the project site, the detention basin does not maintain a hydroperiod long enough to support successful breeding. Therefore, the site is unable to support a breeding population of this species. Further, the site is surrounded by intense urban development acting as a barrier to dispersal from breeding habitats in the vicinity. No critical habitat for this species occurs within or adjacent to the project site (USFWS 2010). California red-legged frogs have been recorded within the project vicinity at Chesbro Reservoir, within mitigation ponds adjacent to the Kirby Canyon Landfill, and within historic quarry pits located along Coyote Creek Parkway (CNDDB 2021). However, no records of the species are located within 2.4 miles of the project site (CNDDB 2021). Additionally, the site is separated from potential breeding habitats in the vicinity, such as within nearby Fisher Creek, by an underground culvert system that is not suitable for dispersal of this species. Determined to be absent.
Foothill yellow-legged frog (*Rana boylii*)	SC, VHP	Found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Ideal habitat for this species consists of streams with riffles and cobble-sized rocks, with slow water flow (Jennings and Hayes 1994).	**Absent.** Not known to occur in the project vicinity, and no suitable habitat is present within or near the project site. The nearest occurrences of this species to the project site are located along Llagas Creek 3.9 miles to the west (CNDDB 2021). The VHP does not map the detention basin within the project site as suitable habitat for this species (ICF International 2012), and suitable stream habitat is absent from the vicinity. Further, the species has been extirpated from valley floor areas of Santa Clara County, and is no longer known to occur along the County's streams below major reservoirs, including nearby Anderson Lake (H. T. Harvey & Associates 1999). Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Tricolored blackbird (*Agelaius tricolor*)	ST, VHP	Highly colonial nester that establishes dense breeding colonies in emergent vegetation, grain fields, fallow fields, extensive thickets of blackberry, ruderal vegetation such as mustard or thistle, and occasionally in early-successional riparian habitat. Nesting colonies usually are located near fresh water. Tricolored blackbirds are itinerant nesters, and because their nesting habitat is ephemeral, it is possible for this species to colonize or recolonize an area as suitable breeding habitat becomes available.	**Absent as Breeder.** In Santa Clara County, this species has bred in only a few scattered locations, and is absent from, or occurs only as a non-breeder in, most of the County (Rottenborn 2007a). This species was known to nest on the project site in 2006 and 2007; however, there is no evidence that it has nested there in the last 5 years, or any time since 2007 (H. T. Harvey & Associates 2020). Although the VHP maps the site as containing primary habitat for this species, a survey of the site in 2020 confirmed a lack of sufficient, suitable nesting habitat to support a colony of this species on the site nor within 250 feet (H. T. Harvey & Associates 2020). Further, no individuals were observed on the site during the April 22, 2021 reconnaissance-level survey, and none have been seen during numerous visits to the vicinity by Rottenborn, who lives nearby, since 2007. Individual tricolored blackbirds could occur as occasional foragers within the project site year-round, especially during winter and migration, but the species is not expected to occur in numbers or to breed on the site.
Swainson's hawk (*Buteo swainsoni*)	ST	Prime breeding habitat encompasses riparian draws or clumps of trees surrounded by open grassland or oak savannah for foraging.	**Absent.** Apparently nested in small numbers in Santa Clara County historically, and there is an 1894 nest record from the Berryessa area (in eastern San José) (Bousman 2007a). Since 2013, a pair of Swainson's hawks has nested successfully each year near Coyote Creek in northern Coyote Valley, approximately 5.6 mi northwest of the project site, but no individuals have been known to nest any closer to the project site. Otherwise, this species is known to occur in the project vicinity only as a very infrequent transient during migration. Although nesting Swainson's hawks may be increasing in the region, Swainson's hawks are not expected to nest within or adjacent to the project site due to high levels of human disturbance (e.g., the adjacent residential development) and paucity of high-quality foraging habitat. This species may forage in the region when in transit through the County, but current development of grassland areas adjacent to the project site will further limit the availability of suitable foraging habitat for this species in the project area. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Ideal habitat is composed of remote, forested landscape with old-growth or mature trees and easy access to an extensive and diverse prey base. Forages in fresh and salt water where their prey species (fish) are abundant and diverse. Builds nests in tall, sturdy trees at sites that are in relatively close proximity to aquatic foraging areas and isolated from human activities.	**Absent.** Known to nest (or to have recently nested) in Santa Clara County in at least 10 locations, mostly near reservoirs (Bousman 2007b, Ventana Wildlife Society 2012). No suitable nesting habitat for bald eagles is present within and immediately surrounding the project site. Further, no suitable foraging habitat is present within the project site, as this species is not expected to forage in such a small basin lacking fish. Determined to be absent.
Least Bell's vireo (*Vireo bellii pusillus*)	FE, SE, VHP	Nests in heterogeneous riparian habitat, often dominated by cottonwoods and willows.	**Absent.** This species has not been recorded nesting anywhere in the project vicinity. The only breeding records in Santa Clara County are from Llagas Creek southeast of Gilroy in 1997 and the Pajaro River south of Gilroy in 1932 (Rottenborn 2007b). Otherwise, the only confirmed records in the County of least Bell's vireos are of 1–2 singing males along lower Llagas Creek in May 2001 (CNDDB 2021) and a singing male on May 23, 2016 in Alviso (Jeffers, pers. comm.). A singing male Bell's vireo in June 2006 along Coyote Creek near the Coyote Creek Golf Club (H. T. Harvey & Associates 2007) may have also been of this subspecies, but it was not seen to confirm that its plumage matched that of *pusillus*; the eastern (nominate) subspecies has also occurred in the county (in Alviso in June 2019). The VHP does not map suitable habitat for this species as occurring within the project site (ICF International 2012). Although the abundance and distribution of this species may increase as core populations increase, it is unlikely to be more than a rare and very locally occurring breeder along southern Santa Clara County streams (south of the project site). Determined to be absent.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, ST, VHP	Annual grassland or mixed shrub and grassland habitats throughout low, rolling hills and in valleys.	**Absent.** This species has not been recorded within, and is not expected to occur within, the project site. The closest area of potential occurrence (based on VHP mapping) is approximately 13 miles southeast of the project site in the vicinity of Pacheco Creek and the uppermost reaches of the Pajaro River, where it may occur infrequently and in low numbers during dispersal (ICF International 2012). Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Mountain lion (*Puma concolor*) Southern California/Central Coast ESU	SC	Has a large home range size and occurs in a variety of habitats. Natal dens are typically located in remote, rugged terrain far from human activity. May occasionally occur in areas near human development, especially during dispersal.	**Absent.** In the Project region, mountain lions occur primarily in the Santa Cruz Mountains and the Diablo Range, although individuals will occasionally disperse into the valley floor. However, this species is not expected to occur within and surrounding the project site owing to high levels of human activity and the impediments to dispersal posed by U.S. Route 101, Monterey Road, and other roads and development.
California Species of Special Concern			
Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*)	CSSC	Cool rivers and large streams that reach the ocean and that have shallow, partly shaded pools, riffles, and runs.	**Absent.** Chinook salmon are known to occur in nearby Coyote Creek below Anderson Dam. However, the project site is not directly connected to any creeks and is therefore not accessible to this species. Determined to be absent.
Pacific lamprey (*Entosphenus tridentatus*)	CSSC	Medium- and large-sized, low-gradient cold rivers and streams, with a wide range of habitats (e.g., gravel, low-gradient riffles).	**Absent.** This species is known to be present in nearby Coyote Creek. However, the project site is not directly connected to any creeks and is therefore not accessible to this species. Determined to be absent.
Central California roach (*Lavinia symmetricus symmetricus*)	CSSC	Generally found in small streams, they are well adapted to intermittent watercourses (e.g., tolerant of high temperatures and low oxygen levels).	**Absent.** This species is known to be present in nearby Coyote Creek. However, the project site is not directly connected to any creeks and is therefore not accessible to this species. Determined to be absent.
Sacramento hitch (*Lavinia exilicauda exilicauda*)	CSSC	Warm, lowland, waters including clear streams, turbid sloughs, lakes, and reservoirs. Has a high tolerance for varying stream conditions and water temperature.	**Absent.** This species is known to be present in nearby Coyote Creek. However, the project site is not directly connected to any creeks and is therefore not accessible to this species. Determined to be absent.
Riffle sculpin (Cottus gulosus)	CSSC	Permanent, cool, headwater streams with an abundance of riffles and rocky substrates.	**Absent.** This species is not known to occur downstream from Anderson Dam within nearby Coyote Creek (Smith 2006). Further, the project site is not directly connected to any creeks and is therefore not accessible to this species. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Western pond turtle (*Actinemys marmorata*)	CSSC, VHP	Occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California (Bury and Germano 2008). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and western pond turtles do not occur commonly along high-gradient streams. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas (Jennings and Hayes 1994). Juveniles feed and grow in shallow aquatic habitats (often creeks) with emergent vegetation and ample invertebrate prey. Nesting habitat is typically found within 600 feet of aquatic habitat (Jennings and Hayes 1994), but if no suitable nesting habitat can be found close by, adults may travel overland considerable distances to nest.	**Absent.** Although the VHP maps the project site as primary habitat for this species, a lack of suitable aquatic habitat was noted during the April 22, 2021 reconnaissance-level survey. Current conditions do not support a hydroperiod that lasts long enough to provide suitable aquatic habitat for this species. Secondary habitat is mapped by the VHP within grassland areas to the east and south of the project site (ICF International 2012). However, current and future development of these grasslands will limit the availability of upland habitat in the project area. The nearest known extant records of western pond turtles occur approximately 1.7 miles to the north within Coyote Creek, 2.4 miles to the northeast within Anderson Reservoir, and 2.4 miles to the southwest within Chesbro Reservoir (CNDDB 2021). These locations are separated from the site by U.S. Route 101, Monterey Road, and surrounding urban development that are likely to preclude the dispersal of this species to the project site. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Burrowing owl (*Athene cunicularia*)	CSSC, VHP	Prefers annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting. The nesting season as recognized by the CDFW (California Department of Fish and Game 2012) extends from February 1 through August 31. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate (Gorman et al. 2003); young birds disperse across the landscape from 0.1 to 35 miles from their natal burrows (Rosier et al. 2006).	**Absent.** Burrowing owls were present in Coyote Valley into the late 1990s, but they have been infrequently recorded in the area in recent years (Trulio 2007). Surveys for breeding burrowing owls conducted for the VHP (Albion Environmental 2008) found no owls breeding in the project vicinity, and there are no other recent (i.e., post-2000) breeding records from the project vicinity in the CNDDB (CNDDB 2021) or in eBird (Cornell Lab of Ornithology 2021). Additionally, surveys for breeding burrowing owls conducted annually for the SCVHP have not documented breeding activity in the project vicinity in recent years (Santa Clara Valley Habitat Agency 2020). Thus, although burrowing owls nested in the project vicinity historically, they are currently known to occur there only as scarce nonbreeders. Further, no burrows of California ground squirrels were observed within the project site, which therefore does not provide suitable nesting and roosting habitat for burrowing owls. Given the burrowing owl's extremely limited distribution in the project vicinity in recent decades, the current development of surrounding grassland areas, and the lack of nesting or roosting habitat, burrowing owls are not expected to occur within or adjacent to the project site. Determined to be absent.
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Open habitats interspersed with shrubs, trees, poles, fences, or other perches from which it can hunt. Nests are built in densely foliated shrubs or trees, often containing thorns, which offer protection from predators and on which prey items are impaled. The breeding season may begin as early as mid-February and extends through July.	**Absent as Breeder.** Loggerhead shrikes are known to nest in the project vicinity where open grassland, ruderal, or agricultural habitat with scattered brush, chaparral, or trees providing perches and nesting sites are present (Bousman 2007c). The project site provides ostensibly suitable breeding and foraging habitat for this species. However, development of grassland areas surrounding the site has degraded habitat in the area, and this species has not been recently observed in the immediate project vicinity. Further, this species typically nests in larger areas of grasslands and agricultural fields in the region (e.g., in Santa Teresa County Park and along Coyote Ridge). Individual loggerhead shrikes may occur as occasional foragers within the project site, especially during winter and migration.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
Yellow warbler (*Setophaga petechia*)	CSSC (nesting)	Nests in riparian woodlands. Prefers riparian corridors with an open overstory of mature cottonwoods and sycamores, a midstory of box elder (*Acer negundo*) or willow, and a substantial shrub understory (Bousman 2007d.	**May be Present.** In Santa Clara County, yellow warblers have been recorded nesting in riparian habitats along a number of creeks, including nearby Coyote Creek, and they are known to nest in the project vicinity (Bousman 2007d, CNDDB 2021). The riparian habitat within the project site provides suitable nesting habitat for up to 1–2 pairs of yellow warblers, and nonbreeding individuals occur in this habitat in the spring and fall when they are an abundant migrant throughout the project region.
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains.	**Absent.** This subspecies breeds along Coyote Creek as far south as Montague Expressway, approximately 22 miles north of the project site. Common yellowthroats nesting in the vicinity of the project site (i.e. along nearby Coyote Creek) are of the non-special-status subspecies *arizela* (San Francisco Bay Bird Observatory 2012). Determined to be absent.
Grasshopper sparrow (*Ammodramus savannarum*)	CSSC (nesting)	Nests and forages in grasslands, meadows, fallow fields, and pastures.	**Absent as Breeder.** Not known to nest in valley floor grassland areas near the project site, and suitably extensive grasslands to support nesting by this species are not present within or surrounding the project site. Individual grasshopper sparrows may occasionally forage in grassland habitat within and adjacent to the project site during migration.
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	**Absent as Breeder.** Historically, pallid bats were likely present in a number of locations throughout the project region, but their populations have declined in recent decades. This species has been extirpated as a breeder from urban areas close to the Bay, as is the case within the project site. No high-quality roosting habitat is present on the site, and no known maternity colonies of this species are present within or adjacent to the site. There is a low probability that the species occurs in the site vicinity at all due to urbanization; however, individuals from more remote colonies could potentially forage over open habitats on and adjacent to the project site on rare occasions.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub.	**Absent.** Suitable habitat for this species is present in the project vicinity, such as along nearby Fisher Creek and Coyote Creek. However, the April 22, 2021 focused survey determined that no nests of this species are present within the project site. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence within the Project Site
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	**Absent.** Badgers are not expected to forage or den within or immediately adjacent to the project site due to human disturbance from activities associated with the development of adjacent grasslands, as well as existing residential and commercial development, and high levels of activity along Monterey Road, which separate the project site from more extensive grassland areas suitable for this species (e.g., on either side of Coyote Valley). Determined to be absent.
State Fully Protected Species			
American peregrine falcon (*Falco peregrinus anatum*)	SP	Forages in many habitats; nests on cliffs and tall bridges and buildings.	**Absent as Breeder.** This species may occasionally forage in natural areas within and surrounding the project site (i.e., throughout the detention basin, and in adjacent grassland areas left undisturbed by current development activities) during the nonbreeding season, though always at low densities. Peregrine falcons are not expected to nest within the project site, which lacks suitable cliff-like habitat for nesting.
Golden eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas.	**Absent.** No suitable nesting habitat for golden eagles is present within the project site. This species occurs in the project vicinity as an occasional forager, primarily during migration and winter. However, no suitable foraging habitat for golden eagles is present in the limited areas of grassland habitat within the project site. Determined to be absent.
White-tailed kite (*Elanus leucurus*)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	**May be Present.** White-tailed kites are common residents in open areas in the project vicinity. Trees within and surrounding the detention basin may be used for nesting, and the species will forage in grassland habitats within and surrounding the site year-round. Up to one pair of kites may nest within or immediately adjacent to the project site.

Key to Abbreviations:

Status: Federally Endangered (FE); Federally Threatened (FT); Federal Candidate for Listing (FC); State Endangered (SE); State Threatened (ST); State Candidate (SC); State Fully Protected (SP); California Species of Special Concern (CSSC); Santa Clara Valley Habitat Plan Covered Species (VHP)

Four special-status bird species, the tricolored blackbird (*Agelaius tricolor*), loggerhead shrike (*Lanius ludovicianus*), grasshopper sparrow (*Ammodramus savannarum*), and American peregrine falcon (*Falcon peregrinus anatum*) can occasionally occur within the project site as nonbreeding foragers (i.e., they do not nest within the project site). The pallid bat (*Antrozous pallidus*), a California species of special concern, may also forage aerially over habitats within the project site. These species are not expected to nest, roost, or breed in or immediately adjacent to the project site, and will be affected very little, if at all, by the proposed project.

The yellow warbler (*Setophaga petechia*), white-tailed kite (*Elanus leucurus*), and monarch butterfly (*Danaus plexippus*) could potentially breed in very low numbers within or immediately adjacent to the project site.

5.3 Sensitive Natural Communities, Vegetation Alliances, and Habitats in the Plan Area

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDB 2021). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings are a reflection of the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (Faber-Langendoen et al. 2012):

G1/S1: Critically imperiled

G2/S2: Imperiled

G3/S3: Vulnerable.

G4/S4: Apparently secure

G5/S4: Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (CNPS 2021b). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2021). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2021).

Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

5.3.1 Sensitive Natural Communities

A query of sensitive habitats in the CNDDB (2021) identified one sensitive natural communities as occurring within the nine 7.5-minute USGS quadrangles containing or surrounding the basin area: (1) sycamore alluvial woodland (Rank G1/S1.1). Riparian woodland within the basin does not meet the definition of sycamore alluvial woodland, which is dominated by western sycamore (*Platanus racemosa*), and occurs within braided, depositional channels of intermittent streams, usually with cobble or boulder substrate (Holland 1986). Similarly, northern maritime chaparral or serpentine bunchgrass grassland do not occur in the basin.

5.3.2 Sensitive Vegetation Alliances

The coastal and valley freshwater marsh wetlands in the basin most closely aligns with the *Schoenoplectus californicus – Typha latifolia* Alliance as described in the Manual of California Vegetation, 2nd Edition (Sawyer et. al. 2009). This alliance is ranked as G5/S4 and is not considered sensitive (CDFW 2021). The willow riparian forest and scrub within the basin is dominated by sandbar willow and would be considered a *Salix exigua* (Sandbar willow thickets) Alliance. This alliance is ranked as G5/S4 meaning that it is considered "secure" on a global scale, and "apparently secure" on a statewide level (CDFW 2021). The coast live oak forest and woodland above the basin's banks would be classified as a *Quercus agrifolia* (Coast Live Oak Woodland) Alliance. This alliance is ranked as G5/S4 meaning that it is considered "secure" on a global scale and "apparently secure" on a statewide level (CDFW 2021). The northern coastal scrub/Diablan sage scrub on the banks is ranked as G5/S5 meaning it is considered "secure" on a global scale and on a statewide level (CDFW 2021).

5.3.3 CDFW Riparian Habitat

Due to its rarity and disproportionately high habitat values and functions to wildlife, CDFW considers riparian habitat to be sensitive. As described above in Section 3.2.4, the CDFW may claim jurisdiction over areas at, and below, the top of bank lines regardless of the vegetative composition of these areas. In addition, CDFW jurisdiction would extend to the outer edges of riparian tree canopies, which in this case is encompassed within the top of bank of the basin, as shown on Figure 3.

5.3.4 Sensitive Habitats (Waters of the U.S./State)

The dominant plant species within the floor of the basin are strongly hydrophytic; they are designated Obligate (i.e., almost always occur in wetlands) or Facultative Wetland (i.e., usually occur in wetlands but may occur in non-wetlands) by the USACE (Lichvar et al 2016). If a formal three-parameter wetland delineation were to be performed in this habitat, a sample point located in any portion of this habitat would qualify for hydrophytic vegetation and wetland hydrology via the FAC-Neutral test. A thick algal crust was observed over much of the lowest portion of the basin bottom, another indicator for wetland hydrology. A soil pit was not dug to investigate the presence of hydric soils, but it is our opinion that hydric soil conditions are likely present. While the basin was constructed in dry upland habitats, the basin bottom now supports wetland vegetation and would likely be considered jurisdictional under the Clean Water Act. As described above under Section 3.1.1, the coastal and valley freshwater marsh wetlands at the basin bottom are considered waters of the U.S./State. The

boundaries of these habitats as shown in Figure 3 were mapped in the field based on the presence of the dominant vegetation and therefore represent the extent of the likely jurisdictional wetlands. The RWQCB would likely also consider the riparian vegetation located below the top of the bank of the basin (i.e., willow riparian forest and scrub land cover type) to be important buffers to Waters of the State associated with the basin.

5.3.5 Nonnative and Invasive Species

Several nonnative, invasive plant species occur in the basin. Of these, 10 species have a rating of "limited" invasiveness (considered invasive but their ecological impacts are minor on a statewide level and their reproductive biology and other attributes result in low to moderate rates of invasiveness) according to the California Invasive Plant Council (Cal-IPC) (2021). Nine species have a "moderate" rating, indicating that they have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure, and that their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment would be generally dependent upon ecological disturbance. Species with a "high" invasive rating by the Cal-IPC have the potential to cause severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment, and most are widely distributed ecologically (Cal-IPC 2021). Himalayan blackberry (R*ubus armeniacus*) is the only species with a "high" rating observed in the basin, occurring in one location near the top of a bank. Due to their ubiquity in the region, the proposed project activities are not expected to result in the spread of non-native and invasive plant species. The Cal-IPC rating for each species is listed in Appendix C.

Section 6. Impacts and Mitigation Measures

CEQA and the State CEQA Guidelines provide guidance in evaluating impacts of projects on biological resources and determining which impacts will be significant. The Act defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project."

Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G (Chapter IV) may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

A. "have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

B. "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

C. "Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means"

D. "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"

E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"

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"

Potential impacts on biological resources as a result of the proposed project were systematically evaluated at the project level. These impacts were first evaluated to qualitatively describe how proposed project activities could impact biological resources, and whether impacts would be temporary (i.e., occurring only during project construction and the period immediately following) or permanent. Impacts were then evaluated with the application of any applicable VHP conditions (see below) with which the proposed project must comply to determine whether the impacts were significant (and thus required mitigation).

6.1 Santa Clara Valley Habitat Plan

The Santa Clara Valley Habitat Agency (SCVHA) leads the implementation of the VHP. The SCVHA is a regional partnership between the CDFW, the USFWS, and six local partners, including the Santa Clara Valley Water District, the County of Santa Clara, Santa Clara Valley Transportation Authority, and the Cities of San José, Gilroy, and Morgan Hill. The VHP was adopted in 2013 by all local participating agencies, and permits were issued from the USFWS and CDFW. The VHP is both a habitat conservation plan and natural community conservation plan, or HCP/NCCP. The planning document helps private and public entities plan and conduct projects and activities in ways that lessen impacts on natural resources, including specific threatened and endangered species. The VHP identifies regional lands (called reserves) to be preserved or restored to the benefit of at-risk species, and describes how reserves will be managed and monitored to ensure that they benefit those species. In providing a long-term, coordinated planning for habitat restoration and conservation, the VHP aims to enhance the viability of threatened and endangered species throughout the Santa Clara Valley.

The VHP defines measures to avoid, minimize, and mitigate impacts on covered species and their habitats while allowing for the implementation of certain "covered projects". Chapter 6 of the VHP includes detailed and comprehensive conditions to avoid and minimize impacts on the 18 "covered species" (nine animal species and nine plant species) included in the plan area, which consists of 519,506 acres, or approximately 62% of Santa Clara County. These conditions are designed to achieve the following objectives:

- provide avoidance of certain covered species during implementation of covered activities throughout the project site;
- prevent take of individuals of certain covered species from covered activities as prohibited by law (e.g., take of fully protected species);
- minimize impacts on natural communities and covered species where conservation actions will take place; and
- avoid and minimize impacts on jurisdictional wetlands and waters throughout the study area to facilitate project-by-project wetland permitting.

In conformance with the VHP, project proponents are required to pay impact fees in accordance with the types and acreage of habitat or "land cover" impacted, and to implement conservation measures specified by the VHP. Land cover impacts are used because they are the best predictor of potential species habitat, and this approach is applicable to all of the covered species (with the exception of the burrowing owl). The SCVHA has mapped the following three fee zones in the VHP area: (1) ranchland and natural lands, (2), agricultural and valley floor lands, and (3) small vacant sites (SCVHA 2020).

Additional fees in-lieu of providing compensatory mitigation are imposed for projects that impact serpentine habitat, wetlands, and burrowing owls, and for certain projects that result in atmospheric nitrogen emissions, although in some cases, project proponents may provide land to restore or create habitats protected by the

VHP in lieu of payment of fees. This project will not result in impacts that necessitate serpentine, burrowing owl, or nitrogen emission fees.

The basin is located within the Urban Service Development Area under the VHP (Figure 6; SCVHA 2021). The proposed project may be classified as an "Urban Development" project, as the project includes maintenance of stormwater management facilities (i.e., detention basin). The proposed project does not likely qualify for In-Stream Operations and Maintenance projects because the VHP classifies the basin's Wetland Fee Zone as a pond, rather than a stream, and because the basin is not directly in-line with any stream (e.g., it is separated from Fisher Creek itself via pump-assisted piping). Regardless of how the project is categorized for VHP coverage purposes, we expect that this is a "covered project" under the VHP (ICF International 2012).

The project would result in both temporary and permanent impacts (Table 2). Direct impacts would result from the following activities:

- Vegetation clearing for vehicular access: Temporary impacts would occur due to clearing ruderal vegetation and limbing mature trees within California annual grassland and willow riparian forest and scrub. These land cover types would be expected to recover to previous conditions within one year. Permanent impacts would be due to removal of woody shrubs within northern coastal scrub/Diablan sage scrub as these woody species would be expected to take longer than a year to recover.
- Excavation of basin bottom: Permanent impacts on coastal and valley freshwater marsh, northern coastal scrub/Diablan sage scrub, and willow riparian forest and scrub would result from removing all vegetation to excavate the basin bottom and a few feet up the toe of the stop. These land use types are expected to take longer than a year to recover to previous conditions.

Table 2. Acreage of Impacts per Land Cover Type

Land Cover Types	Impacts (acres)	
	Permanent Impacts	Temporary Impacts
California Annual Grassland	0.00	0.12
Coast Live Oak Forest and Woodland	0.00	0.00
Coastal and Valley Freshwater Marsh	2.82	0.00
Northern coastal scrub/Diablan sage scrub	0.02	0.00
Urban-Suburban	0.00	0.00
Willow Riparian Forest and Scrub	0.74	0.02[1]
Total	**3.58**	**0.14**

[1]This impact is proposed to a woody vegetation type, but it is considered temporary because the proposed project activity only involves limbing of tree branches to allow vehicles to pass instead of removal of entire trees.

VHP conditions that apply to the proposed project are provided below.

6.1.1 Condition 1. Avoid Direct Impacts on Legally Protected Plant and Wildlife Species

Several wildlife species that occur in the project vicinity are protected under state and federal laws. Some of these animal species are listed as fully protected under the California Fish and Game Code (e.g., the white-tailed kite), and eagles are protected under the Bald and Golden Eagle Protection Act. Further, all native bird species and their nests are protected under the MBTA and California Fish and Game Code. Actions conducted under the VHP must comply with the provisions of the MBTA and California Fish and Game Code.

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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 6. VHP Urban Service Area, Development Areas, and Fee Zones

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6.1.2 Condition 3. Maintain Hydrologic Conditions and Protect Water Quality

Condition 3 applies to all projects and identifies a set of programmatic BMPs, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality, including during project construction. These requirements include preconstruction, construction site, and post-construction actions. Preconstruction conditions are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for stormwater treatment and flow control.

6.1.3 Condition 12. Wetland and Pond Avoidance and Minimization

Condition 12 applies to all projects that result in direct or indirect impacts to wetlands and ponds. Project proponents are required to pay a wetland fee for impacts to cover the cost of restoration or creation of aquatic land cover types required by the VHP (ICF International 2012). This condition identifies a set of programmatic BMPs and control measures to reduce impacts to wetlands and ponds. These measures focus on the design phase (e.g., direct urban runoff through a filtration facility before it reaches a wetland) and the construction phase (e.g., implement appropriate erosion control measures to reduce siltation and runoff from the site.

6.1.4 Condition 17. Tricolored Blackbird

This condition applies to projects that are located within 250 feet of any riparian, coastal, and valley freshwater marsh and helps to protect tricolored blackbirds by prescribing preconstruction surveys, construction buffer zones, biological monitoring, and other requirements. If a project is located within 250 feet of habitat mapped as pond by the VHP, a qualified biologist must confirm that the pond land cover type is present. If a qualified biologist verifies that the project area is within 250 feet of pond habitat, a qualified biologist must conduct a field investigation to identify and map potential nesting substrate. If suitable nesting substrate is identified, avoidance and minimization measures must be implemented (see pages 4-43 to 4-44 of the VHP).

The proposed project is located within 250 feet of an area (i.e., the on-site detention basin) mapped by the VHP as suitable nesting habitat for the tricolored blackbird (ICF International 2012). Therefore, per Condition 17 of the VHP, H. T. Harvey & Associates wildlife ecologist E. Malkauskas, B.S., conducted a field investigation to identify and map potential nesting substrate for tricolored blackbirds on April 22, 2021. No suitable vegetation for nesting by tricolored blackbirds was present within the detention basin nor within 250 feet of the project site due to predominance by woody riparian vegetation and shorter ruderal vegetation and the absence of large stands of emergent vegetation. This conclusion is consistent with the results of a tricolored blackbird habitat survey performed last year by H. T. Harvey & Associates (2020) for this basin in association with the adjacent residential development. Thus, no additional surveys or avoidance and minimization measures are necessary.

6.2 Impacts on Special-Status Species: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less than Significant with Mitigation)

6.2.1 Impacts on Regionally Common Land Cover Types and Associated Common Plant and Wildlife Species (Less than Significant)

Proposed project activities would result in up to 0.14 acres of impacts to regionally common land cover types, including California annual grassland and northern coastal scrub/Diablan sage scrub (Figure 3). Of the 0.14 acres of impacts, 0.12 acres of California annual grassland would be temporarily impacted and 0.02 acres of northern coastal scrub/Diablan sage scrub would be permanently impacted for the proposed excavation area. The portions of California annual grassland and northern coastal scrub/Diablan sage scrub to be impacted occur on the engineered banks, such that these areas do not provide regionally rare or especially high-value habitat for native vegetation or wildlife, or special-status species. Nevertheless, these impacts would reduce the extent of vegetation within the basin and would result in a reduction in abundance of some of the common plant and wildlife species that use the site. However, California annual grassland and northern coastal scrub/Diablan sage scrub are abundant and widespread regionally, are not considered sensitive by the VHP (ICF International 2012), and are not particularly valuable from the perspective of providing important plant or wildlife habitat. Therefore, impacts on these habitats are considered less than significant. Further, because the number of individuals of any common plant or animal species within these habitats, and the proportion of these species' regional populations that could be disturbed, is very small, the project's impacts would not substantially reduce regional populations of these species. Thus, these impacts do not meet the CEQA standard of having a *substantial* adverse effect, and would not be considered significant under CEQA.

Although no mitigation is necessary to reduce project impacts on regionally common land cover types and associated plant and animal species to less-than-significant levels under CEQA, these species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

6.2.2 Impacts on Water Quality (Less than Significant)

Direct impacts on riparian habitat and wetlands are discussed below in Section 6.3.1 and Section 6.4. Impacts on water quality in the basin could potentially occur as a result of sediment mobilization or contaminant spills. Indirect impacts on Fisher Creek, the local groundwater aquifer, or on general water quality are unlikely due to the distance between these activities and the creek and the filtration process when contaminants leach through the soil horizons; however, the potential for water quality impacts due to these activities cannot be ruled out.

The project will comply with all VHP conditions, including Conditions 3, which requires implementation of design phase, construction phase, and post-construction phase measures, including programmatic BMPs,

performance standards, and control measures, to minimize increases of peak discharge of storm water and to reduce runoff of pollutants to protect water quality, including during construction. Indirect impacts on water quality from sediment removal would be further avoided and minimized by implementing erosion and sediment control measures, as well as BMPs for work near aquatic environments. Construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with state requirements to control the discharge of storm water pollutants under the NPDES *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control BMPs, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors.

In many Bay Area counties, including Santa Clara County, projects must also comply with the *California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit* (Water Board Order No. R2-2015-0049). This permit requires that all projects implement BMPs and incorporate Low Impact Development practices into the design to prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site after construction has been completed. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors.

Thus, with compliance with VHP Conditions 3 and permit requirements, potential project impacts on water quality would be less than significant under CEQA.

6.2.3 Impacts on Nonbreeding Special-Status Birds and Mammals (Less than Significant)

Several special-status bird and one mammal species occur within the project site as nonbreeding migrants, transients, or foragers, but they are not known or expected to breed or occur in large numbers within or near the project impact areas. These are the tricolored blackbird, loggerhead shrike, grasshopper sparrow, American peregrine falcon, and pallid bat.

The tricolored blackbird (a state threatened species and covered under the VHP) is not expected to occur within or adjacent to the project site as a breeder due to the absence of suitable habitat, but individuals may occur occasionally as foragers during the nonbreeding season. The loggerhead shrike (a California species of special concern) is not expected to occur within or adjacent to the project site as a breeder due to current development of grassland areas surrounding the site, which has degraded habitat in the area. Additionally, this species typically nests in larger areas of grasslands and agricultural fields in the region and it has not been recently observed in the immediate project vicinity. Individual loggerhead shrikes may occur as occasional foragers within the project

site, especially during winter and migration. The grasshopper sparrow (a California species of special concern) breeds in expansive grassland habitats in the foothills, and individuals may occasionally forage in grassland habitat within the project site during migration. The American peregrine falcon (a state fully protected species) is not expected to breed within the project site due to a lack of suitable nesting habitat, though individuals of this species may occasionally forage within and adjacent to the project site in small numbers. The pallid bat (a California species of special concern) may be present within the project site as an occasional forager, but is not expected to breed within the project site due to a lack of suitable habitat, and there are no known maternity colonies within or adjacent to the site. Nevertheless, individuals from more remote colonies could potentially forage over the open grassland habitat on the site on rare occasions.

Activities under the proposed project would have some potential to impact foraging habitats and/or individuals of these species. Construction activities might result in a temporary direct impact through the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during maintenance activities) but would not result in the loss of individuals, as individuals of these species would move away from any construction areas or equipment before they could be injured or killed. Further, the habitats within the project site do not provide important foraging habitat used regularly or by large numbers of individuals of any of these species. As a result, impacts under the project will have little impact on these species' foraging habitat and no substantive impact on regional populations of these species. Therefore, this impact would be less than significant.

Although no mitigation is necessary to reduce project impacts on these species to less-than-significant levels under CEQA, these species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

6.2.4 Impacts on the Yellow Warbler and White-Tailed Kite (Less than Significant)

The yellow warbler (a California species of special concern) could potentially nest in riparian habitat within and immediately adjacent to the project site around the detention basin, and individuals may forage in this habitat during migration and winter. The white-tailed kite (a state fully protected species) may nest in trees within and adjacent to the project site, and individuals may forage in grasslands surrounding the site year-round. The yellow warbler and white-tailed kite are assessed together because the potential impacts of the project on these species would be similar.

Based on site observations, the areal extent of suitable habitats within the project site, and known breeding densities of these species, it is likely that no more than two pairs of yellow warblers and one pair of white-tailed kites could potentially nest within or immediately adjacent to the project site. The project would result in the temporary and permanent loss of suitable nesting and foraging habitat for these species due to the temporary and permanent removal of trees and upland areas. In addition, activities that occur during the nesting season and cause a substantial increase in noise or human activity near active nests of yellow warblers or white-tailed kites may result in the abandonment of active nests (i.e., nests with eggs or young). Heavy ground disturbance,

noise, and vibrations caused by project activities could also potentially disturb nesting and foraging individuals and cause them to move away from work areas.

Because the number of nesting pairs of each species that could be disturbed is very small (i.e., 1–2 pairs), the impacts of project activities would represent a very small fraction of the regional population of these species. Therefore, neither the potential loss of individual yellow warblers or white-tailed kites, nor the disturbance of nesting and foraging habitat, would rise to the CEQA standard of having a *substantial* adverse effect, and these impacts would thus not constitute a significant impact on this species or its habitat under CEQA. All native bird species, including white-tailed kites, are protected from direct take by federal and state statutes, and the project will comply with VHP Condition 1 either by restricting work to the non-nesting season (September 1 through January 31) or by conducting preconstruction surveys prior to project activities and maintaining appropriate buffers around active nests of protected birds.

Although no mitigation is necessary to reduce project impacts on the white-tailed kite and yellow warbler to less-than-significant levels under CEQA, these species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

6.2.5 Impacts on the Monarch Butterfly (Less than Significant)

The monarch butterfly (a candidate for listing under FESA) could occur on the site as a migrant, with small numbers of individuals nectaring at flowers. Because a single host plant (narrow leaf milkweed) was found on the project site during the April 22, 2021 reconnaissance survey, it is possible that the species could occasionally breed on the site as well, although breeding here is highly unlikely due to the paucity of milkweed host plants.

Activities under the proposed project would have some potential to impact nectaring and breeding monarchs within the project site. However, these impacts would be minimal and temporary in nature. In the event that this species uses the site for occasional nectaring or breeding, the project will not preclude the presence of suitable nectar sources or habitat for milkweed. The site would therefore continue to provide resources for the monarch butterfly following project activities. In addition, the site supports only a small proportion of regionally available nectar sources and milkweed plants, such that temporary or permanent impacts to habitat on the site will not have substantive impacts on regional availability of suitable nectar sources or larval host plants for monarchs. Though unlikely, there is a possibility for project activities to impact eggs or larvae of this species in the event that they are breeding on the site. However, any such impact would represent a small proportion of regional populations and therefore would not have a substantive impact on them. For these reasons, potential impacts to monarch butterflies on the project site would be less than significant.

Although no mitigation is necessary to reduce project impacts on the monarch butterfly to less-than-significant levels under CEQA, this species will benefit from the conservation program of the VHP (e.g., preservation, enhancement, and management of numerous habitat types throughout the VHP Reserve System) to which the project would contribute via payment of VHP impact fees.

6.3 Impacts on Sensitive Communities: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less Than Significant with Mitigation)

6.3.1 Impacts on Riparian Habitat or Other Sensitive Natural Communities (Less than Significant)

The CDFW defines sensitive natural communities and vegetation alliances using NatureServe's standard heritage program methodology (CDFW 2021), as described above in Section 5.3. Aquatic, wetland, and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS (see Section 6.4 below). Project impacts on sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, were considered and evaluated.

The willow riparian forest and scrub onsite mostly grows in or near the toe of the slope. The majority of ground-disturbing project impacts (i.e., sediment removal) will occur in the basin bottom and immediately uphill from the toe of the slopes, overlapping heavily with this land cover type. Therefore, much of the riparian habitat will require removal. Despite the avoidance incorporated into the project design and implementation plan, the proposed project will require up to 0.74 acres of vegetation removal within the willow riparian forest and scrub habitat (Figure 3).

In the north and east corners of the basin, up to 0.02 acres of willow riparian forest and scrub will require limbing to allow for construction access (Photos 3 and 10, Appendix C). In these areas, the impact will consist primarily of clearing out understory vegetation, which is variously dominated by non-native annual grasses such as wild oats and ripgut brome and some limbing of sandbar and arroyo willows. Some tree removal may be required in this area, but this will be avoided to the maximum extent feasible and will be limited to small saplings. Some trimming of ordinance-size (as defined by the City of Morgan Hill tree ordinance) trees (e.g., limbing of lower branches) will be required to allow for access. In accordance with VHP definitions of permanent vs. temporary impacts, these 0.02 acres of willow riparian forest and scrub for vehicular access are considered temporary impacts because the woody vegetation to be removed will likely return to preconstruction conditions within 1 year following construction.

Impacts on riparian habitat will be minimized through implementation of VHP Conditions 3, which require implementation of design phase, construction phase, and post-construction phase measures, including programmatic BMPs, performance standards, and control measures, to minimize increases of peak discharge of storm drain water and to reduce runoff of pollutants to protect water quality, including during construction. The required construction period BMPs and post-construction stormwater requirements will apply to the project as discussed above in Section 6.2.2, and these requirements would further avoid and reduce these impacts. To inhibit the spread of non-native, invasive plant species in areas of ground disturbance, VHP Condition 3 includes a measure requiring the revegetation of all disturbed soils with native plants and/or grasses

suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. Also, the project will pay VHP impact fees for impacts of the project on natural habitats, including riparian impact fees. Those fees will contribute to the VHP's conservation program, which includes restoration, enhancement, and management of riparian habitats, thus compensating for impacts of VHP-covered projects on riparian habitats. The Santa Clara Valley Habitat Agency uses these fees to fund the acquisition and restoration of similar riparian habitats within the Plan area, thus compensating for the small loss of riparian habitat. Because the project will comply with VHP conditions, including payment of impact fees, and will comply with permit requirements, impacts to riparian habitat will be less than significant.

6.4 Impacts on Wetlands: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (Less than significant with mitigation)

The coastal and valley freshwater marsh grows in the basin bottom and is considered jurisdictional wetlands and Waters of the U. S. and State, a protected habitat type. The project design proposes to directly impact 2.82 acres of wetlands through vegetation removal during soil excavation (Figure 3). This area encompasses the basin bottom and a few feet above the toe of the slopes where the habitat transitions to upland (Photos 1 and 6, Appendix C). Therefore, much of the wetland habitat will require removal. The degree to which wetland vegetation re-establishes will be a function of the expected duration of seasonal inundation following the grading and whether that will result in open water habitat persisting and replacing the current wetland vegetation. Because that is not known at this point, the removal of the wetland vegetation for excavation purposes is considered a permanent impact.

The project will comply with all VHP conditions, including Conditions 3, which requires implementation of design phase, construction phase, and post-construction phase measures, including programmatic BMPs, performance standards, and control measures, to minimize increases of peak discharge of storm drain water and to reduce runoff of pollutants to protect water quality, including during construction. In addition, required construction period BMPs and post-construction storm water requirements will apply to the project as discussed above in Section 6.2.2, and these requirements would further avoid and reduce these impacts.

Also, the project will pay VHP impact fees for impacts of the project on natural habitats, including wetland impact fees. Those fees will contribute to the VHP's conservation program, which includes restoration, enhancement, and management of wetland habitats, thus compensating for impacts of VHP-covered projects on such habitats. The Santa Clara Valley Habitat Agency uses these fees to fund the restoration of similar wetland habitats within the Plan area, thus compensating for these impacts. Thus, with compliance with VHP Conditions 3, and permit requirements, project impacts on wetlands would be less than significant under CEQA.

6.5 Impacts on Wildlife Movement: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant)

Landscape linkages are segments of land that provide a connection between suitable habitats across the landscape, while also providing cover, allowing species to disperse through otherwise unsuitable areas. On a broader level, linkages may also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity).

In the proposed project region, natural habitats are important for movement as long as no barriers to connectivity exist. However, the habitats comprising the project site are separated from natural lands (e.g., in the hills on either side of Coyote Valley, or along Fisher Creek or Coyote Creek) by extensive urban development, thus limiting the potential for the site to support regional wildlife movement.

By disturbing habitats within the detention basin, project activities could discourage some wildlife species from moving between suitable habitat patches during the construction period. In addition, noise and disturbance associated with construction activities could cause species that commonly use habitats within the project site for dispersal to avoid dispersal through the area, at least temporarily. However, any discouragement of wildlife movement during construction would have a low effect, as the site is already separated from similar habitat areas in the project vicinity. Once construction activities are complete, wildlife movement conditions would generally be similar to pre-project conditions, and wildlife dispersal to and from the project site would be similar to existing conditions.

Numerous animals breed within and around the project site, but no particularly important wildlife nursery areas are present in the project vicinity or would be impacted by the project.

Although proposed project activities may temporarily affect local wildlife movement during construction, animals would still be able to move through or around the project work areas during construction. Permanent impacts on wildlife movement resulting from the project would be limited to the loss of some vegetative cover within the site. These impacts would not substantially reduce the value of the detention basin for wildlife movement. Thus, the project will not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, and this impact is less than significant. Although no mitigation is necessary to reduce project impacts on wildlife movement to less-than-significant levels, the VHP conservation program will assemble a Reserve System with landscape linkages and wildlife movement in mind to protect and, where possible, enhance movement pathways on a regional scale. The project's impact fees will thus contribute to the maintenance and improvement of

opportunities for movement and genetic exchange of native plants and animals within and between natural communities inside and connecting to areas outside of the VHP Reserve System.

6.6 Impacts due to Conflicts with Local Policies: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

6.6.1 Impacts Due to the Removal of City of Morgan Hill Ordinance-Sized Trees (Less than Significant)

Implementation of the proposed project would result in the removal of a number of ordinance-sized trees that are present in the basin, mostly in or near the toe of the slopes. This includes the certain removal of 56 ordinance-size trees (as defined by the City of Morgan Hill tree ordinance) that consist of red willows and Fremont cottonwood. An additional 23 ordinance-size trees are located close to the grading line and may possibly be removed. Lastly, 12 ordinance-size trees will be retained as they are rooted well outside the grading limits high on the banks. The project proponent will submit permit applications for tree removal for this project once it determines exactly which, and how many, trees will be removed as part of the project. In accordance with the provisions of the Morgan Hill Municipal Code (Ord. No. 2205 N.S., § 1, 6-15-2016), the Standard Permit Conditions listed below would be implemented by the project.

Standard Permit Conditions

1. Replacement of trees removed (either on-site on the banks of the basin or elsewhere in the City) with plantings of trees acceptable to the community development director. In all cases, native trees shall be planted to replace native trees removed unless practical reasons preclude this option;

2. Use of measures to effect erosion control, soil and water retention and diversion or control of increased flow of surface waters;

3. Use of measures to insure that the contemplated action will not have adverse environmental effects relating to shade, noise buffers, protection from wind, air pollution and historic features; and/or

4. Posting of a bond to insure maintenance of substitute landscaping pursuant to the requirements of Chapter 18.74 of this code.

With the incorporation of the above measures to insure compliance with the City of Morgan Hill tree ordinance, any potential impacts related to conflict with local policies or ordinances protecting trees would be less than significant.

6.7 Impact due to Conflicts with an Adopted Habitat Conservation Plan: Conflict with the provisions of an adopted habitat conservation

plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (Less Than Significant)

The City of Morgan Hill is a signatory to the VHP, which is a Habitat Conservation Plan and Natural Community Conservation Plan. As described in Section 6.1, the project is considered a "covered project" under the VHP. No VHP-covered species are expected to be significantly impacted by the proposed project as discussed in this report (Section 6.2 above). Similarly, impacts on sensitive habitats, such as stream and riparian habitats for which the VHP requires specific impact fees, are discussed in this report. The project will apply for VHP coverage and will adhere to all applicable VHP Conditions during project implementation. Therefore, the proposed project would not be in conflict with the VHP.

The proposed project would not be in conflict with any other adopted habitat conservation plans or natural community conservation plans, or with any other approved local, regional, or state habitat conservation plans or natural community conservation plans. Thus, impacts associated with conflicts between the proposed project and any adopted habitat conservation plan or natural community conservation plan are less than significant.

6.8 Cumulative Impacts

Cumulative impacts arise due to the linking of impacts from past, current, and reasonably foreseeable future projects in the region. Future development activities in the City of Morgan Hill and development activities covered by the VHP will result in impacts on the same habitat types and species that will be affected by the proposed project. The proposed project, in combination with other projects in the area and other activities that impact the species that are affected under the project, could contribute to cumulative effects on special-status species. Other projects in the area include both development and maintenance projects that could adversely affect these species and restoration projects that will benefit these species.

The cumulative impact on biological resources resulting from the project in combination with other projects in the region would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project, and the benefits to biological resources accruing from the VHP. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts on biological resources would occur.

However, the VHP includes numerous conservation measures to offset adverse effects on covered activities. Many projects in the region that impact resources similar to those impacted by the proposed project will be covered activities under the VHP and will mitigate impacts on sensitive habitats and many special-status species through that program, which will require payment of fees for habitat restoration.

Further, the project would implement a number of BMPs and mitigation measures to reduce impacts on both common and special-status species, as described above. Thus, the project will not contribute to substantial cumulative effects on biological resources.

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Appendix A. Tree Survey, Arborist Report, and Preliminary Tree Protection Guidelines

Appendix B. Plants Observed

Family	*Species*	Common Name	Wetland Rank	Cal-IPC Rank
Ferns				
Marsileaceae – Marsilea Family	*Marsilea vestita* ssp. *vestita*	hairy water-clover	OBL	
Eudicots				
Anacardiaceae – Sumac Family	*Schinus terebinthifolius**	Brazilian pepper tree	FAC	Limited
	Toxicodendron diversilobum	western poison oak	FACU	
Apocynaceae – Dogbane Family	*Asclepias fascicularis*	narrow-leaf milkweed	FAC	
Asteraceae – Sunflower Family	*Anthemis cotula**	mayweed	FACU	
	Baccharis pilularis ssp. *consanguinea*	coyote brush		
	Crepis vesicaria ssp. *taraxacifolia**	taraxacum-leaved bladder-like hawksbeard		
	Cynara cardunculus ssp. *cardunculus**	artichoke		
	*Dittrichia graveolens**	stinkwort		Moderate
	Heterotheca sessiliflora ssp. *echioides*	viper's sessileflower goldenaster		
	*Lactuca serriola**	prickly lettuce	FACU	
	*Pseudognaphalium luteoalbum**	white lamb cudweed	FAC	
	Psilocarphus tenellus	slender woolly-marbles	OBL	
	*Tragopogon porrifolius**	salsify		
	Xanthium strumarium	cocklebur	FAC	
Boraginaceae – Borage Family	*Amsinckia intermedia*	common fiddleneck		
	Plagiobothrys undulatus	wavy-stemmed popcornflower	OBL	
Brassicaceae – Mustard Family	*Brassica nigra**	black mustard		Moderate
	*Raphanus sativus**	radish		Limited
	Rorippa palustris ssp. *palustris*	marsh yellow cress	OBL	
Convolvulaceae – Morning–Glory Family	*Convolvulus arvensis**	bindweed		
Crassulaceae – Stonecrop Family	*Crassula aquatica*	water crassula	OBL	

Family	*Species*	Common Name	Wetland Rank	Cal-IPC Rank
Fabaceae – Legume Family	*Acmispon americanus* var. *americanus*	American deervetch		
	*Medicago polymorpha**	variable burclover	FACU	Limited
	*Trifolium hirtum**	rose clover		Moderate
	*Trifolium incarnatum**	crimson clover		
	*Vicia sativa**	garden vetch	FACU	
	*Vicia villosa**	hairy vetch		
Fagaceae – Oak Family	*Quercus agrifolia*	coast live oak		
Geraniaceae – Geranium Family	*Erodium botrys**	long-beaked filaree	FACU	
	*Geranium dissectum**	dissected geranium		Moderate
Lythraceae – Loosestrife Family	*Lythrum hyssopifolia**	hyssop-leaf loosestrife	OBL	Limited
Myrsinaceae – Myrsine Family	*Lysimachia arvensis**	scarlet pimpernel	FAC	
Oleaceae – Olive Family	*Fraxinus uhdei**	shamel ash		
Onagraceae – Evening Primrose Family	*Epilobium ciliatum*	fringed willowherb	FACW	
Papaveraceae – Poppy Family	*Eschscholzia californica*	California poppy		
Plantaginaceae – Plantain Family	*Plantago coronopus**	cleft-leaved plantain	FAC	
	*Plantago lanceolata**	English plantain	FAC	Limited
	Veronica peregrina ssp. *xalapensis*	purslane speedwell	FAC	
Polygonaceae – Buckwheat Family	*Persicaria maculosa**	lady's thumb	FACW	
	*Polygonum aviculare**	knotweed	FAC	
	*Rumex crispus**	curly dock	FAC	Limited
Rosaceae – Rose Family	*Crataegus monogyna**	one-pistil hawthorn	FAC	Limited
	Heteromeles arbutifolia	toyon		
	*Rubus armeniacus**	Himalayan blackberry	FAC	High
Salicaceae – Willow Family	*Populus fremontii* ssp. *fremontii*	Fremont cottonwood	FAC	
	Salix exigua	sandbar willow	FACW	
	Salix lasiolepis	arroyo willow	FACW	
MONOCOTS				
Alismataceae – Water–Plantain Family	*Alisma lanceolatum**	lance-like water-plantain	OBL	

Family	*Species*	Common Name	Wetland Rank	Cal-IPC Rank
Cyperaceae – Sedge Family	*Cyperus eragrostis*	lovegrass flatsedge	FACW	
	Eleocharis macrostachya	large-spiked spikerush		
	Schoenoplectus acutus var. *occidentalis*	common tule	OBL	
Juncaceae – Rush Family	*Juncus bufonius*	toad rush	FACW	
Poaceae – Grass Family	*Aira caryophyllea**	silver hair grass	FACU	
	*Avena fatua**	wild oat		Moderate
	Bromus catharticus var. *catharticus**	rescue grass		
	*Bromus diandrus**	ripgut grass		Moderate
	*Bromus hordeaceus**	soft chess	FACU	Limited
	*Festuca bromoides**	brome fescue	FACU	
	*Festuca perennis**	Italian rye grass	FAC	Moderate
	Hordeum marinum ssp. *gussoneanum**	Mediterranean barley	FAC	Moderate
	*Hordeum murinum**	wall barley	FACU	Moderate
	*Pennisetum clandestinum**	kikuyu grass		Limited
	*Polypogon monspeliensis**	annual beard grass	FACW	Limited
Typhaceae – Cattail Family	*Typha latifolia*	broad-leaved cattail	OBL	

Cal-IPC: California Invasive Plant Council

* Non-native or invasive species

Cal-IPC Rank:

Watch List	These species are predicted to become invasive if no further actions are taken. Distribution may range from limited to widespread in specific regions.
Limited	These species are invasive, but their ecological impacts are minor on a statewide level. They have low to moderate rates of colonization. Although their distribution is generally limited, these species may be locally persistent and problematic.
Moderate	These species have substantial and apparent—but generally not severe—ecological impacts on the surrounding habitat. They have moderate to high rates of dispersal. Distribution may range from limited to widespread.
High	These species have severe ecological impacts on the surrounding habitat. They have moderate to high rates of dispersal and establishment, and most are widely distributed.

Arid West Wetland Designations:

FACU	Plants that are not wetland dependent. They are non-wetland plants by habitat preference.
FAC	These plants can occur in wetlands or non-wetlands. They can grow in hydric, mesic, or xeric habitats.
FACW	Plants dependent on and predominantly occur with hydric soils, standing water, or seasonally high water tables in wet habitats.
OBL	Wetland-dependent plants that require standing water or seasonally saturated soils near the surface.

Appendix C. Representative Photographs of Fisher Basin

Photo 1. Representative photo of transition zone between upland slopes and freshwater marsh in the bottom of the basin. This area contains a high diversity of plant species.

Photo 2. Construction of existing bioretention basin in southeast corner of site.

Photo 3. Eastern vehicular access point and 84-inch storm drain.

Photo 4. Exposure point of underground corrugated pipe, connecting from the banks to under the basin bottom.

Photo 5. Representative photo of California annual grassland.

Photo 6. Location of bioretention basin to be constructed in northeast corner of site in future (impacts to be analyzed as a separate project). Photo shows willow riparian forest and scrub in the background, California annual grassland in the foreground, and coastal and valley freshwater marsh in the middle. A transition zone between the grassland and the marsh is visible.

Photo 7. Representative photo of coastal and valley freshwater marsh in foreground and willow riparian forest and scrub in background. The algal crust in the marsh indicates the presence of ponded water earlier in the rainy season.

Photo 8. Representative photo of northern coastal scrub/Diablan sage scrub.

Photo 9. Representative photo of pump station classified as urban-suburban.

Photo 10. Northern vehicular access point.

Photo 11. Representative photo of willow riparian forest and scrub.

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Cotati, CA 94931

Memo

Date: **March 5, 2021**

To: **Patrick Kallas, David J. Powers & Associates, Inc.**

From: **Michael Thill, Illingworth & Rodkin, Inc.**

SUBJECT: **Fisher Basin Expansion, Morgan Hill, California (IR Job # 20-109)**

This memo has been prepared to describe the potential noise impacts attributable to the expansion of the existing Fisher Basin in Morgan Hill, California. Figure 1 is an aerial image of the site vicinity with the project site plan overlay.

Project Location and Description

The City of Morgan Hill owns and operates a regional drainage basin located along the railroad tracks between Monterey Road and Butterfield Boulevard, North of Digital Drive and South of Jarvis Drive. The basin provides detention for the Morgan Hill Ranch Business Park.

To meet future detention and retention needs of the City in the Upper Llagas Watershed area, based upon new estimates of future rainfall load, the City desires to excavate this existing asset, and introduce more storage capacity. The project would excavate 81,000 cubic yards (CY) of soil over the course of five weeks. Materials from the excavation would be disposed at the Kirby Canyon Landfill or sent to a development site in the City in need of surplus soil, which would reduce the length of trips (compared to Kirby Canyon) needed to deposit and dispose of the dirt this summer.

FIGURE 1 Project Site Plan and Vicinity

Source: Google Earth, March 2021.

Applicable Regulatory Criteria

City of Morgan Hill Municipal Code. The City of Morgan Hill's Municipal Code Chapter 8.28 states that "It is unlawful and a misdemeanor for any person to make or continue, or cause to be made or continued, any loud, disturbing, unnecessary or unusual noise or any noise which annoys, disturbs, injures or endangers the comfort, health, repose, peace or safety of other persons within the city." The following sections of the code would be applicable to the project:

D. 1. Construction activities as limited below. "Construction activities" are defined as including but not limited to excavation, grading, paving, demolition, construction, alteration or repair of any building, site, street or highway, delivery or removal of construction material to a site, or movement of construction materials on a site. Construction activities are prohibited other than between the hours of seven a.m. and eight p.m., Monday through Friday and between the hours of nine a.m. to six p.m. on Saturday. Construction activities may not occur on Sundays or federal holidays. No third person, including but not limited to landowners, construction company owners, contractors, subcontractors, or employers, shall permit or allow any person working on construction activities which are under their ownership, control or direction to violate this provision. Construction activities may occur in the following cases without violation of this provision:

a. In the event of urgent necessity in the interests of the public health and safety, and then only with a permit from the chief building official, which permit may be granted for a period of not to exceed three days or less while the emergency continues and which permit may be renewed for periods of three days or less while the emergency continues.

b. If the chief building official determines that the public health and safety will not be impaired by the construction activities between the hours of eight p.m. and seven a.m., and that loss or inconvenience would result to any party in interest, the chief building official may grant permission for such work to be done between the hours of eight p.m. and seven a.m. upon an application being made at the time the permit for the work is issued or during the progress of the work.

c. The city council finds that construction by the resident of a single residence does not have the same magnitude or frequency of noise impacts as a larger construction project. Therefore, the resident of a single residence may perform construction activities on that home during the hours in this subsection, as well as on Sundays and federal holidays from nine a.m. to six p.m., provided that such activities are limited to the improvement or maintenance undertaken by the resident on a personal basis.

d. Public work projects are exempt from this section and the public works director shall determine the hours of construction for public works projects.

e. Until November 30, 1998, construction activities shall be permitted between the hours of ten a.m. to six p.m. on Sundays, subject to the following conditions. No power-driven vehicles, equipment or tools may be used during construction activities, except on the interior of a building or other structure which is enclosed by exterior siding (including windows and doors) and roofing, and which windows and doors are closed during construction activities. Construction activities must be situated at least one hundred fifty feet from the nearest occupied dwelling. No delivery or removal of construction material to a site, or movement of construction materials on a site, is permitted. No activity, including but not limited to the playing of radios, tape players, compact disc players or other devices, which creates a loud or unusual noise which offends, disturbs or harasses the peace and quiet of the persons of ordinary sensibilities beyond the confines of the property from which the sound emanates is allowed.

2. If it is determined necessary in order to ensure compliance with this section, the chief building official may require fences, gates or other barriers prohibiting access to a construction site by construction crews during hours in which construction is prohibited by this subsection. The project manager of each project shall be responsible for ensuring the fences, gates or barriers are locked and/or in place during hours in which no construction is allowed. This subsection shall apply to construction sites other than public works projects or single dwelling units which are not a part of larger projects.

Construction Noise Impacts

Project construction is expected to start in July 2021 and to be completed by mid-September 2021. Construction phases would include demolition (3 workdays) site preparation (5 workdays), grading/excavation (33 workdays), and building exterior (10 workdays).

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. A list of typical maximum instantaneous noise levels measured at 50 feet are provided in Table 1. Maximum noise levels typically range from about 80 to 90 dBA L_{max} at a distance of 50 feet from the noise source. Typical hourly average construction-generated noise levels for office buildings are about 78 to 89 dBA L_{eq} measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.), as shown in Table 2.

TABLE 1 Construction Equipment 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes:

1 Measured at 50 feet from the construction equipment, with a “slow” (1 sec.) time constant.

2 Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

3 Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

Source: Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.

TABLE 2 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

Based on a review of the supplied construction equipment lists, construction noise levels are calculated to range from 84 to 90 dBA L_{max} and from 80 to 87 dBA L_{eq} at 50 feet. These project specific construction noise levels generally agree with the range of typical maximum and average noise levels presented above. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

Noise-sensitive receptors in the project vicinity include the City of Morgan Hill El Toro Fire Station (approximately 450 feet west the center of the basin) and the Bender Circle single family residences (approximately 575 feet southwest the center of the basin). Construction noise levels are calculated to range from 61 to 68 dBA L_{eq} at 450 feet and from 59 to 66 dBA L_{eq} at 575 feet assuming unshielded conditions. However, as the basin is deepened, the construction activities would be shielded by intervening terrain resulting in noise levels that are 5 to 10 dBA less. Daytime traffic noise levels at these existing receptors to the west and southwest are typically 55 to 65 dBA L_{eq}[1] depending on the proximity of the receptor to Monterey Road. Based on the above noise level estimates, there could be periods of time where unshielded construction noise levels could exceed ambient noise levels. Shielded construction activities occurring within the basin would not generally produce noise levels that would substantially existing conditions at receptors west of Monterey Road.

The nearest existing sensitive land uses to the north and south of the project site include multi-family residences along Jarvis Drive (approximately 1,000 feet from the center of the basin) and a single-family

[1] Illingworth & Rodkin, Inc., Solera Ranch Residential Development Environmental Noise Assessment, October 17, 2014.

residence and multi-family residences located between Old Monterey Road and the Union Pacific Railroad (approximately 1,200 feet from the center of the basin). Construction noise levels are calculated to range from 54 to 61 dBA L_{eq} at 1,000 feet and from 52 to 59 dBA L_{eq} at 1,200 feet assuming unshielded conditions. As noted above, the construction activities would be shielded as the basin is deepened resulting in noise levels that are 5 to 10 dBA less. A review of noise data contained in I&R files[2] indicates that traffic noise levels along Jarvis Drive are typically 55 to 65 dBA L_{eq}, or greater, during daytime periods depending on the proximity to Monterey Road and Butterfield Boulevard. In addition, on-going construction associated with the Butterfield-Keenan project, which is located between the project site and Jarvis Drive receptors, would produce noise levels that would mask the more distant construction noise levels produced at the Fisher Basin. There could be periods of time where unshielded construction noise levels could exceed ambient noise levels at Jarvis Drive residences, but shielded construction activities occurring within the basin would not produce noise levels that would substantially exceed existing conditions. Daytime noise levels at the single-family residence and multi-family residences located between Old Monterey Road and the Union Pacific Railroad are approximately 49 to 72 dBA L_{eq}[3]. Unshielded or shielded construction activities occurring within the basin would not produce noise levels that would substantially existing conditions at Old Monterey Road residences south of the project site.

Once materials are excavated from the Fisher Basin, the project proposes to haul these materials to the Kirby Canyon Landfill for disposal or to a development site in the City in need of surplus soil. Haul trucks would either utilize the route of Jarvis Drive to Monterey Road to Cochrane Road to Highway 101, or alternatively, the proposed project would use the new Sutter Boulevard extension to Butterfield Boulevard to Cochrane Road and Highway 101.

The additional haul truck traffic would primarily affect the Madrone Plaza multi-family residences north of the site. The haul truck noise level calculations assume that 50,581 CY of materials will be exported over 33 workdays. Conservatively, 256 haul trucks (12 CY) are assumed over a 10-hour period. During each hour of the workday, approximately 26 haul truck trips would occur. The hourly average noise level expected from these ruck trips is 57 dBA L_{eq} at 70 feet from the centerline of the Jarvis Drive or Butterfield Boulevard, and 54 dBA L_{eq} at 110 feet from the centerline of Monterey Road or Cochrane Road. These noise levels would typically be below ambient traffic noise levels in the area, which are 55 to 65 dBA L_{eq}, or greater.

The relative increase in traffic noise levels, as measured using a day-night average noise level (L_{dn}), would be less. Traffic noise levels at perimeter residential units of the Madrone Plaza project, adjacent to Monterey Road and Cochrane Road are estimated to range from about 73 to 75 dBA L_{dn}, respectively. Traffic noise levels at the facades of the nearest units to Butterfield Boulevard are estimated to be approximately 69 dBA L_{dn}. Exterior noise levels at the facades of residential units adjoining Jarvis Road are estimated to be approximately 60 dBA L_{dn}. Worst-case L_{dn} noise levels attributable to haul truck traffic would be 53 dBA L_{dn}. Based on the above noise level estimates, the temporary addition of haul truck noise levels would increase ambient L_{dn} noise levels by less than 1 dBA L_{dn} along Jarvis Drive and 0 dBA L_{dn} along Butterfield Boulevard, Monterey Road, and Cochrane Road. The temporary noise increase due to haul truck traffic would not be measurable or perceptible.

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[2] Illingworth & Rodkin, Inc., Madrone Plaza Residential Project Environmental Noise Assessment, April 18, 2006.
[3] Illingworth & Rodkin, Inc., Spring 2014 General Plan Amendments Environmental Noise Assessment, August 12, 2014.

In summary, construction noise levels from on-site operations or haul truck traffic would not substantially increase noise levels at receptors in the project vicinity over a temporary period. Construction noises associated with projects of this type are disturbances that are necessary for the construction or repair of buildings and structures in urban areas in order to protect the health and safety of persons, promote the general welfare of the community, and maintain the quality of life. The short-term and intermittent noise due to the project would be considered less than significant.

MITIGATION MONITORING AND REPORTING PROGRAM

Fisher Creek Detention Basin Expansion Project
File Number: 415020
August 2021

CITY OF MORGAN HILL

PREFACE

Section 21081.6 of the California Environmental Quality Act (CEQA) requires a Lead Agency to adopt a Mitigation Monitoring and Reporting Program (MMRP) whenever it approves a project for which measures have been required to mitigate or avoid significant effects on the environment. The purpose of the monitoring and reporting program is to ensure compliance with the mitigation measures during project implementation.

The Initial Study (IS) prepared for the Fisher Creek Detention Basin Expansion Project concluded that the implementation of the project could result in significant effects on the environment and mitigation measures were incorporated into the proposed project or are required as a condition of project approval. This MMRP addresses those measures in terms of how and when they will be implemented.

This document does *not* discuss those subjects for which the IS concluded that the impacts from implementation of the project would be less than significant.

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
	Timeframe and Responsibility for Implementation	**Method of Compliance**	**Oversight of Implementation**
AIR QUALITY			
Impact AIR-1: The proposed project would result in fugitive dust impacts in the form of PM2.5 and PM10 during construction of the project..			
MM-AIR-1 During any construction period ground disturbance, the City shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects: 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. 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.	To be implemented by the City and contractors during construction.	All measures will be printed on all construction documents, contracts, and project plans prior to issuance of grading permit.	City Engineer

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
	Timeframe and Responsibility for Implementation	**Method of Compliance**	**Oversight of Implementation**
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph). 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. 8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.			
BIOLOGICAL RESOURCES			
Impact BIO-1: Construction activities on the project site could result in the loss of raptor and/or migratory bird eggs or nestlings, either directly by destroying an active nest or indirectly by disturbing and causing the abandonment of an active nest.			

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
	Timeframe and Responsibility for Implementation	**Method of Compliance**	**Oversight of Implementation**
MM BIO-1.1: Construction shall be scheduled to avoid the nesting season to the extent feasible. If construction can be scheduled to occur between September 1st and January 31st (inclusive) to avoid the raptor nesting season, no impacts will be expected. If construction will take place between February 1st and August 31st, then pre-construction surveys for nesting birds shall be completed by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. Surveys shall be completed within 30 days of the on-set of site clearing or construction activities. During this survey, the ornithologist shall inspect all trees and other potential nesting habitats (e.g., trees, shrubs, buildings) onsite trees as well as all trees within 250 feet of the site for nests. **MM BIO-1.2**: If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist shall determine the extent of a disturbance-free buffer zone to be established around the nest (typically 250 feet for raptors and 50-100 feet for other species) that shall remain off limits to construction until the nesting season is over, to ensure that no nests of species protected by the Migratory Bird Treaty Act and California Fish and Wildlife Code will be disturbed during project implementation. A report indicating the result of the survey and any designated buffer zones shall be submitted to the satisfaction of the City Engineer prior to issuance of a grading permit.	To be implemented by qualified biologist prior to issuance of any grading permit.	All measures will be printed on all construction documents, contracts, and project plans prior to issuance of any grading permit.	City Engineer

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
	Timeframe and Responsibility for Implementation	**Method of Compliance**	**Oversight of Implementation**
Impact BIO-2: The proposed project would disturb willow riparian forest and would require fee payment and avoidance and minimization measures to reduce impacts.			
MM BIO-2.1: The proposed project would be required to comply with Habitat Plan Condition 3 which applies to all projects and identifies a set of programmatic BMPs, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality, including during project construction. These requirements include preconstruction, construction site, and post-construction actions. Preconstruction conditions are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for stormwater treatment and flow control. **MM BIO-2.2**: The project will pay VHP impact fees for impacts of the project on natural habitats, including riparian impact fees. Those fees will contribute to the VHP's conservation program, which includes restoration, enhancement, and	The City and contractor would carry out these measures prior to construction and throughout the construction process. Payment of fees would be carried out prior to construction.	All measures will be required as part of the grading permit. All measures will be printed on all construction documents, contracts, and project plans prior to issuance of any grading permit.	City Engineer Santa Clara Valley Habitat Agency

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	Timeframe and Responsibility for Implementation	**Method of Compliance**	**Oversight of Implementation**
management of riparian habitats, thus compensating for impacts of VHP covered projects on riparian habitats. The Santa Clara Valley Habitat Agency uses these fees to fund the acquisition and restoration of similar riparian habitats within the Plan area, thus compensating for the small loss of riparian habitat.			
Impact BIO-3: The proposed project would disturb coastal and valley freshwater marsh wetland and would require fee payment and avoidance and minimization measures to reduce impacts.			
MM BIO-3.1: The proposed project would be required to comply with Habitat Plan Condition 3 which applies to all projects and identifies a set of programmatic BMPs, performance standards, and control measures to minimize increases of peak discharge of stormwater and to reduce runoff of pollutants to protect water quality, including during project construction. These requirements include preconstruction, construction site, and postconstruction actions. Preconstruction conditions are site design planning approaches that protect water quality by preventing and reducing the adverse impacts of stormwater pollutants and increases in peak runoff rate and volume. They include hydrologic source control measures that focus on the protection of natural resources. Construction site conditions include source and treatment control measure to prevent pollutants from leaving the construction site and minimizing site erosion and local stream sedimentation during construction. Post-construction conditions include measures for stormwater treatment and flow control.	The City and contractor would carry out these measures prior to construction and throughout the construction process. Payment of fees would be carried out prior to construction.	All measures will be required as part of the grading permit. All measures will be printed on all construction documents, contracts, and project plans prior to issuance of any grading permit.	City Engineer

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
	Timeframe and Responsibility for Implementation	**Method of Compliance**	**Oversight of Implementation**
MM BIO-3.2: The project will pay VHP impact fees for impacts of the project on natural habitats, including wetland impact fees, in accordance with Condition 12. These fees will contribute to the VHP's conservation program, which includes restoration, enhancement, and management of wetland habitats, thus compensating for impacts of VHP-covered projects on such habitats. The Santa Clara Valley Habitat Agency uses these fees to fund the restoration of similar wetland habitats within the Plan area, thus compensating for these impacts.			
Impact BIO-5: The removal, cutting down, poisoning, or other destruction of protected trees, including pruning that would reduce the canopy area by more than 25 percent of any Ordinance sized tree, would require permits or mitigation measures under the City Municipal Code (Chapter 12.32).			
MM BIO-5.1: To the extent feasible, activities shall avoid impacts to any protected trees. Avoidance is considered to be completely avoiding any work or staging under the dripline of trees. The boundary of the designated avoidance buffer shall be flagged or fenced prior to initial ground disturbance. If complete avoidance is not feasible, BIO MM-5.2 shall be implemented. **MM BIO-5.2**: The City shall comply with local ordinances and submit permit applications for removal, trimming, damage, or relocation of all trees covered by the City ordinance. Any trees to be removed shall require replacement at a two to-one ratio on a comparable ratio of size. The replacement trees shall be planted on site to the extent feasible and the project proponent shall	To be implemented by contractor and City. If trees must be removed a qualified arborist would oversee activities prior to removal of trees.	All measures will be printed on all construction documents, contracts, and project plans prior to issuance of any grading permits.	City Engineer

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
	Timeframe and Responsibility for Implementation	**Method of Compliance**	**Oversight of Implementation**
comply with all other replacement requirements imposed by the City.			
CULTURAL RESOURCES			
Impact CUL-1: Previously unrecorded archaeological resources and/or human remains could be uncovered during project construction.			

Standard Condition CUL-1: In the event of the unintentional discovery of undocumented human remains or significant historic or archaeological materials during construction, the following policies and procedures for treatment and disposition measures shall be implemented:
 	
• If human remains are encountered, they shall be treated with dignity and respect as due to them. Information about such a discovery shall be held in confidence by all project personnel on a need to know basis. The rights of Native Americans to practice ceremonial observances on sites, in labs and around artifacts shall be upheld.
  ○ Remains shall not be held by human hands. Surgical gloves shall be worn if remains need to be handled.
  ○ Surgical mask shall also be worn to prevent exposure to pathogens that may be associated with the remains.
• In the event that known or suspected Native American remains are encountered, or significant historic or archaeological materials are discovered,
	To be implemented by the City and contractors during construction.	All measures will be required as part of the grading permit. All measures will be printed on all construction documents, contracts, and project plans prior to issuance of any grading permit.	City Engineer

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
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ground-disturbing activities shall be immediately stopped. Ground-disturbing project activities may continue in other areas that are outside the discovery location.
• An "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) around the discovery area plus a reasonable buffer zone by the Contractor Foreman or authorized representative, or party who made the discovery, or if on-site at the time or discovery, by the Monitoring Archaeologist (typically 25 to 50 foot buffer for a single burial or archaeological find).
• The discovery location shall be secured as directed by the City if considered prudent to avoid further disturbances.
• The Contractor Foreman or authorized representative, or party who made the discovery shall be responsible for immediately contacting by telephone the parties listed below to report the find and initiate the consultation process for treatment and disposition:
  o The City of Morgan Hill Development Services Director
  o The Contractor's Point(s) of Contact			

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○ The Coroner of the County of Santa Clara (if human remains found) ○ The Native American Heritage Commission (NAHC) in Sacramento ○ The Amah Mutsun Tribal Band • The Coroner will have two working days to examine the human remains after being notified of the discovery. If the remains are Native American, the Coroner has 24 hours to notify the NAHC. The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD). (Note: NAHC policy holds that the Native American Monitor will not be designated the MLD.) • Within 24 hours of their notification by the NAHC, the MLD will be granted permission to inspect the discovery site if they so choose. • Within 48 hours of their notification by the NAHC, the MLD may recommend to the City's Community Development Director the recommended means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native			

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American burials. Only those osteological analyses or DNA analyses recommended by the Amah Mutsun Tribal Band may be considered and carried out. • If the MLD recommendation is rejected by the City of Morgan Hill, the parties will attempt to mediate the disagreement with the NAHC. If mediation fails, then the remains and all associated grave offerings shall be reburied with appropriate dignity on the property in a location not subject to further subsurface disturbance.			
GEOLOGY AND SOILS			
Impact GEO-2: Ground disturbance would expose soils and increase the potential for wind or water related erosion and sedimentation at the site until construction is complete, which could result in a significant erosion impact.			
Standard Condition GEO-1 (Storm Drain System): Prior to final map approval or issuance of a grading permit the City Engineer shall ensure completion of the following: 1. Plan describing how material excavated during construction will be controlled to prevent this material from entering the storm drain system. 2. Water Pollution Control Drawings for Sediment and Erosion Control.	To be implemented by the City and contractors prior to the issuance of a grading permit.	Prepare a plan for control of excavate material and prepare water pollution control drawings.	City Engineer
Standard Condition GEO-2 (NPDES Permit Conformance): As required by the State Water Resources Control Board (SWRCB) Order No. 99-08-DWQ, construction activity resulting in a land disturbance of one acre or more of soil, or whose projects are part of a larger common plan	To be implemented by the City and contractors prior to grading.	File the NOI and prepare a SWPPP in compliance with the General Permit	City Engineer

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of development that in total disturbs more than one (1) acre, are required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharges of Storm Water Associated with Construction Activity (General Permit). To be permitted with the SWRCB under the General Permit, owners must file a complete Notice of Intent (NOI) package and develop a Storm Water Pollution Prevention Plan (SWPPP) Manual in accordance with Section A, B, and C of the General Permit prior to the commencement of soil disturbing activities. A NOI Receipt Letter assigning a Waste Discharger Identification number to the construction site will be issued after the State Water Resource Control Board (SWRCB) receives a complete NOI package (original signed NOI application, vicinity map, and permit fee); copies of the NOI Receipt Letter and SWPPP shall be forwarded to the Building and Public Works Department review. The SWPPP shall be made a part of the improvement plans (SWRCB NPDES General Permit CA000002).			
HYDROLOGY AND WATER QUALITY			
Impact HYD-1: Construction activities could result in significant impacts to water quality due to dust, litter, oil, and other pollutants generated from project construction.			
Standard Condition HYD-1 (Stormwater Management): The proposed project would implement erosion and sediment control measures, as well as BMPs for work near aquatic environments.	To be implemented by the City and contractors prior to and during construction.	All measures will be required as part of construction activities. All measures will be printed on all construction documents,	City Engineer

MITIGATIONS	MONITORING AND REPORTING PROGRAM		
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Construction projects in California causing land disturbances that are equal to one acre or greater must comply with state requirements to control the discharge of storm water pollutants under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Board Order No. 2009-0009- DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the SWRCB describing the project. A Storm Water Pollution Prevention Plan must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: • on-site sediment control BMPs • damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction • utilization of stabilized construction entrances and/or wash racks, .		contracts, and project plans prior to grading.	

Source: City of Morgan Hill. Initial Study. Fisher Creek Detention Basin Expansion Project. August 2021.