

FINAL
INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

Larkspur Landing Remediation Project
2000 Larkspur Landing Circle, Larkspur, CA

Prepared for
Sanitary District No. 1 of Marin County
2960 Kerner Boulevard
San Rafael, CA 94901

Prepared by
The logo for Integral Consulting Inc. features the word "integral" in a bold, lowercase, sans-serif font. A vertical line runs through the letter "i". Below "integral" is the text "consulting inc." in a smaller, lowercase, sans-serif font. A curved line starts from the bottom of the vertical line and sweeps to the right, ending under the "i" in "integral".
703 2nd Street
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June 2017

MITIGATED NEGATIVE DECLARATION

PROJECT TITLE

Larkspur Landing Remediation Project

LEAD AGENCY/NAME AND ADDRESS

Sanitary District No. 1 of Marin County, 2960 Kerner Boulevard, San Rafael, CA 94901

PROJECT LOCATION

The 10.675-acre project site (AP# 018-171-32) is located at 2000 Larkspur Landing Circle, Larkspur, California, near the intersection of East Sir Francis Drake Boulevard and Larkspur Landing Circle East in the City of Larkspur. Of the gross project site area, 0.22 acre lies under the East Sir Francis Drake Boulevard right-of-way and 0.16 acre lies under the Lincoln Village Circle right-of-way, leaving a net project site area of approximately 10.295 acres.

PROJECT DESCRIPTION

The former Larkspur Wastewater Treatment Plant was purchased and operated by the Sanitary District No. 1 of Marin County (District) from 1948 to 1985; the facility was decommissioned in 1985 and demolished in 1998 and 1999. Crushed concrete from the demolition was mixed with soil and used as engineered backfill onsite. The site received a "no further action" letter from the Department of Toxic Substances Control in 2006, but subsequent testing from 2006 to 2008 indicated the presence of elevated concentrations of polychlorinated biphenyls (PCBs) in site media. The District recently completed additional testing to delineate the extent of PCBs and has developed a remediation plan with oversight by the U.S. Environmental Protection Agency, Region 9. The District plans to undertake an environmental remediation project to achieve clean closure of the site and be in compliance with requirements of the Toxic Substances Control Act.

The proposed project includes excavation of approximately 40,000 cubic yards of contaminated soil and fill material within an approximately 2-acre area, transportation and offsite disposal of the contaminated materials, and backfilling and regrading of the site.

MITIGATION MEASURES

Mitigation Measure Bio1

As a mitigation measure to protect wetland resources, remediation will commence at the project site after the District has obtained verification of wetland delineation by the U.S. Army Corps of Engineers (USACE) and concurrence from the Regional Water Quality Control Board (RWQCB). In addition, if Clean Water Act section 401 or 404 permits are deemed necessary by USACE or the RWQCB, the District shall comply with any conditions specified in the permits. If wetlands will be impacted, additional consultation with the Federated Indians of Graton Rancheria (FIGR) will be necessary.

Mitigation Measure Cul1

The District will continue to consult with the Federated Indians of Graton Rancheria (FIGR) prior to initiation of the remedial activities to identify the need for and procedures for the use of tribal monitors, and the appropriate treatment of Native American cultural materials and human remains identified during project implementation, in the event FIGR is identified by the Native American Heritage Commission as the Most Likely Descendant (MLD). A Treatment Plan will be established in consultation with FIGR prior to initiation of excavation activities.

Mitigation Measure Cul2

The following steps will be implemented during excavation activities:

- An experienced archaeologist, selected in consultation with the FIGR, will conduct monitoring in accordance with the established Treatment Plan, which will include “spot” (i.e., periodic) monitoring of excavations throughout the project focusing on excavation activities around the perimeter at the interface of fill and native material. More frequent monitoring will be conducted when closer to the area where important archaeological resources may occur. The District will coordinate with the FIGR prior to and throughout the project execution.
- If the excavation occurs within 25 feet of an area where important archaeological resources may be present, an experienced archaeologist will perform continuous monitoring of removal of soils, including observation of soils in their stratigraphic layers. The archaeological monitor will be permitted to take appropriate samples as warranted.
- The archaeologist will be authorized to stop or redirect project activity until an evaluation of the presence and integrity of any identified resource is made. The procedures will follow the established Treatment Plan.

- A final report will be prepared describing methods used, results and findings of the archaeological monitoring, and the mitigation program. Copies of the final report will be provided to the District, the City of Larkspur, and the California Archaeological Site Survey Northwest Information Center.

Mitigation Measure Cul3

If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 feet will be redirected, and a qualified paleontologist will be contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel will not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and trace fossil evidence of past life such as tracks.

Mitigation Measure Cul4

If human remains are encountered during excavation activities, work at that location will stop and the Marin County Coroner will be notified (as required by California Health and Safety Code Section 7050.5). In the event that the human remains are believed to be those of a Native American, the established Treatment Plan will be followed in consultation with the archaeologist (as required by California Public Resources Code Section 5097.98). The Treatment Plan is expected to include removal of the remains with scientific recording and study, and timely return of the remains to the MLD for final reinternment.

FINDINGS

An Initial Study has been prepared to assess the proposed project's potential effects on the environment and the significance of those effects. Based on the Initial Study, it has been determined that the proposed project, with the mitigation measures described above incorporated, would not have any significant effects on the environment.

A copy of the Initial Study is attached. The materials related to the proposed project are on file at the Sanitary District No. 1 office, located at 2960 Kerner Boulevard, San Rafael, CA 94901, and are available online at www.rvsvd.org.

Greg Norby, P.E.
General Manager

Date

**CALIFORNIA ENVIRONMENTAL
QUALITY ACT INITIAL STUDY
FOR THE LARKSPUR LANDING
REMEDICATION PROJECT**

CALIFORNIA ENVIRONMENTAL QUALITY ACT INITIAL STUDY

Integral Consulting Inc. (Integral) has completed the following document for this project in accordance with the California Environmental Quality Act (CEQA) [Pub. Resources Code, div. 13, § 21000 et seq.] and accompanying Guidelines [Cal. Code Regs., tit. 14, § 15000 et seq.].

PROJECT TITLE: Larkspur Landing Remediation Project		
PROJECT ADDRESS: 2000 Larkspur Landing Circle	CITY: Larkspur	COUNTY: Marin
PROJECT SPONSOR: Sanitary District No. 1 of Marin County	CONTACT: Greg Norby	PHONE: 415-259-2949

LEAD AGENCY ADDRESS: 2960 Kerner Boulevard San Rafael, CA 94901	CONTACT: Greg Norby	PHONE: 415-259-2949
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APPROVAL ACTION UNDER CONSIDERATION: Remedial Action Selection

Project Overview and Purpose

The former Larkspur Wastewater Treatment Plant (LWTP) was purchased and operated by the Sanitary District No. 1 of Marin County (District) from 1948 to 1985; the facility was decommissioned in 1985 and demolished in 1998 and 1999. Crushed concrete from the demolition was mixed with soil and used as engineered backfill onsite. The site received a “no further action” letter from the Department of Toxic Substances Control (DTSC) in 2006, but subsequent testing from 2006 to 2008 indicated the presence of elevated concentrations of polychlorinated biphenyls (PCBs) in site media. The District recently completed additional testing to delineate the extent of PCBs and has developed a remediation plan with oversight by the U.S. Environmental Protection Agency (EPA), Region 9. The District plans to undertake an environmental remediation project to achieve clean closure of the site and be in compliance with requirements of the Toxic Substances Control Act (TSCA).

The proposed project includes excavation of approximately 40,000 cubic yards of contaminated soil and fill material within an approximately 2-acre area, transportation and offsite disposal of the contaminated materials, and backfilling and regrading of the site.

See Attachment A for list of abbreviations and acronyms.

Project Location

The 2000 Larkspur Landing Circle project site (the site) is at the intersection of East Sir Francis Drake Boulevard and Larkspur Landing Circle East in the City of Larkspur (Attachment B, Figure 1). The project site on Assessor's Parcel No. 018-171-32 (Parcel #32) covers about 10.675 acres and is irregular in shape. Of the gross project site area, 0.22 acre lies under the East Sir Francis Drake Boulevard right-of-way and 0.16 acre lies under the Lincoln Village Circle right-of-way, leaving a net project site area of approximately 10.295 acres. The site is presently owned by the District.

Site Setting

The proposed project site is on the San Quentin peninsula in the City of Larkspur. Mount Tamalpais is about 4 miles southwest of the site and San Quentin State Prison is approximately 2 miles east of the site. Regional access to the project site from the north and south is provided by U.S. Highway 101 (U.S. 101), and from the east by the Richmond-San Rafael Bridge (Interstate 580 [I-580]). The project site is also located near the Golden Gate Ferry Terminal and the Marin Airporter bus terminal at 300 Larkspur Landing Circle. The area west of U.S. 101 includes a mix of commercial, residential, and administrative uses.

Just to the north and northwest of the project site are multi-family residential properties such as the apartments at 100 Old Quarry Road and 700 Lincoln Village Circle; a hotel (the Courtyard by Marriott Hotel at 2500 Larkspur Landing Circle); and institutional properties and recreational areas such as the Children's Cottage Cooperative Preschool at 2900 Larkspur Landing Circle and a neighborhood park. To the west of the site between U.S. 101 and Larkspur Landing Circle are commercial developments such as the Larkspur Landing Shopping Center at 2257 Larkspur Landing Circle, the Gateway office development at 17 East Sir Francis Drake Boulevard, the Bosco office building at 100 Larkspur Landing Circle, the Cinemark Century Larkspur Landing at 500 Larkspur Landing Circle, the Gamma Building at 101 Larkspur Landing Circle, and the Larkspur Landing Office Park at 700–900 Larkspur Landing Circle.

The project site itself is bound on the south by East Sir Francis Drake Boulevard¹ with the Corte Madera Creek estuary beyond, and by Larkspur Landing Circle East on the west with the Larkspur Landing Shopping Center beyond. The site is flanked by two office buildings along East Sir Francis Drake Boulevard: the Remillard Brick Kiln office and restaurant building to the east at 125 East Sir Francis Drake Boulevard, and the R.C. Roberts office building to the west at 2200 Larkspur Landing Circle. Residences are located to the north and immediately east of the project site.

Remillard Park is immediately south of East Sir Francis Drake Boulevard, facing the project site. The land from East Sir Francis Drake Boulevard to Corte Madera Creek is designated Shoreline/Marsh Conservation in the *Larkspur General Plan*, Land Use and Circulation Map (City of Larkspur 1990). A multi-purpose path accommodating bicyclists and pedestrians parallels much of East Sir Francis Drake Boulevard along its south side with connections to segments to the west, south, and north through the Cal Park tunnel to San Rafael.

Miwok Park and undeveloped tree-covered hills are to the north and northeast of the site. Miwok Park is a landlocked parcel of land between the adjacent residences and the project site; its principal feature is Tubb Lake, which is a small man-made freshwater lake. Tubb Lake is a remnant of the brick-making operation in the late 19th and early 20th centuries. Beyond Miwok Park is the City of San Rafael

¹ Sir Francis Drake Boulevard is a key east-west through road in Marin County stretching from Point Reyes on the west to the San Quentin Peninsula on the east. The road carries both local and through traffic. The segment east of U.S. 101 is known as East Sir Francis Drake Boulevard. East Sir Francis Drake Boulevard provides an important link for regional traffic between the Richmond-San Rafael Bridge (I-580) and U.S. 101.

corporate boundary. Undeveloped hilly lands are also located adjacent to the project site to the north and east.

Site Background

The former LWTP site was purchased by the District in the 1940s. The District owned and operated the LWTP between 1948 and 1985 when the facility was no longer needed for local wastewater treatment, following completion of the much larger, centralized wastewater treatment plant by the Central Marin Sanitation Agency. The District began planning for removal of the treatment plant in 1995. In 1998 and 1999, the District demolished the onsite concrete structures and associated piping. The crushed concrete material was mixed with onsite soils and used as a non-expansive engineered fill to backfill the excavations left by the demolition process. The site is currently actively used as an operations base for the District, and includes two modular buildings, and an area for sewer maintenance and operations equipment, vehicles, and materials staging. The southernmost approximate 2 acres is the primary area of active use. The site is completely fenced off from the public with a cyclone chain-link fence approximately 8 ft in height, and has a locked swing-gate at the main entrance.

Remediation Plan

The remediation project consists solely of construction activities: site preparation, demolition and/or salvaging of existing features (e.g., concrete catch basin, piping etc.) within the excavation footprint, soil excavation and removal, offsite disposal, backfilling, and site restoration. No new structures will be constructed and there are no operations or ongoing maintenance activities associated with the remediation.

The presumed remedial approach for the site is soil and demolition debris/fill material removal with offsite disposal. Site characterization (Kennedy Jenks, Inc. 2016 [available online at http://rvsd.org/Portals/0/Documents/pdfs/Larkspur%20Landing/SDMC_Site-Characterization-WkPln-Larkspur_09-21-16.pdf]) was conducted to assess the following materials:

- The upper layer of import material that was graded across the site in 2012
- The demolition debris emplaced at the site following demolition of the former wastewater treatment plant
- The soils below the proposed sidewalk area along the western edge of the property
- The sediments in the drainage swale along the eastern and southern extents of the property
- Native soils beyond the lateral and vertical limits of the above materials.

Specifically, samples were collected from the debris and import fill to determine the likely limits of excavation and for waste characterization purposes. This included sampling of native soils horizontally beyond and vertically beneath the limits of the in-place debris and import fill to pre-confirm the limits of excavation. Based on the results of the in-place sampling and analysis, horizontal and vertical boundaries of the excavation will be established, the material will be pre-profiled, and landfill acceptance will be secured prior to initiating the excavation work. Additional sampling and analysis may be conducted during implementation of the remedy if visual observations indicate the presence of debris and/or potentially contaminated soil beyond the proposed limits of excavation. Additional excavation may be performed with verification samples collected.

Based on the data collected to date, an approximately 2 acre area will be excavated to depths ranging from 2 to 22 ft below ground surface (bgs) (Kennedy Jenks, Inc. 2017; Table 16 in Attachment C). The estimated volume of soils to be excavated is 40,000 cubic yards or approximately 60,000 tons

(assuming approximately 1.5 tons per cubic yard). Only 430 cubic yards of material is estimated to require disposal as hazardous/TSCA waste (the remainder will be classified as non-hazardous waste).

The site cleanup goal is 0.24 milligram per kilogram (mg/kg) total PCBs, which will support unrestricted land use (i.e., not require a land use covenant or ongoing operations and maintenance of the site). The phases of remedy implementation are described below.

Site Preparation

Site preparation will include the following general tasks: clearing and grubbing, survey and excavation layout, and preparation of staging, ingress, and egress areas.

- Verify existing site conditions.
- Identify the location of aboveground and underground utilities, equipment, and structures and protect, remove, and/or divert of existing utilities, if necessary.
- Mobilize personnel, equipment, and materials to the site.
- Clear and grub areas as necessary to perform remedial action activities.
- Construct equipment and material staging/dewatering areas (as necessary).
- Prepare equipment and personnel decontamination areas (including portable toilets, wash stations, and waste receptacles).
- Establish erosion and sedimentation control measures.
- Construct temporary access roads (as needed) for ingress and egress of construction equipment as well as offsite transportation of excavated materials and onsite transportation of backfill material.
- Install temporary fencing or barriers as necessary to protect and secure the work areas and protect environmentally sensitive areas (e.g., sensitive biological or cultural areas).
- Obtain the necessary approvals and/or permits from the appropriate federal, state, and local agencies.
- Draft and finalize the necessary management plans (e.g., health and safety, dust control, stormwater pollution prevention, emergency response, revegetation, etc.).
- Educate construction site staff on measures to protect any sensitive biological and cultural resources/tribal cultural and onsite management practices and health and safety measures.

Before construction, the selected contractor will develop a site operations plan that identifies construction equipment staging and support areas, site access, exclusion areas, excavation areas, stockpile areas, truck lanes, parking areas, and site office trailers. Support areas and stockpiles of clean backfill would be placed in a zone not subject to excavation, while excavation and backfilling would be within the exclusion zones.

Recycled materials will be segregated from excavated material and recycled to the extent practicable. Although vegetation within the excavation footprint will need to be removed, no removal of trees will be necessary.

Soil Excavation, Backfilling, and Offsite Disposal

Up to 40,000 cubic yards (approximately 60,000 tons) of soil and fill material within an approximately 2-acre area containing PCBs above the cleanup goal of 0.24 mg/kg total PCBs will be excavated and direct loaded for offsite disposal. A California-licensed hazardous waste contractor will excavate and

remove the contaminated soil. Conventional off-road equipment would be used to excavate, handle, and load the soil. Equipment utilized is expected to include:

- Up to two hydraulic excavators during removal operations
- Up to two front-end loaders during removal and backfilling operations
- One dozer during removal operations and up to two during backfilling operations
- Up to two flatbed delivery trucks at the beginning and end of the job
- Up to five pickup trucks throughout the job.

The approximate excavation areas, limits, and volumes can be described as follows (Kennedy Jenks, Inc. 2017, Figure 21; Attachment C)

- A total of 0.1 acre excavated to 2 ft bgs for a total volume of approximately 300 cubic yards
- A total of 0.4 acre excavated to 5 ft bgs for a total volume of approximately 1,000 cubic yards
- A total of 0.5 acre excavated to 10 ft bgs for a total volume of approximately 11,000 cubic yards
- A total of 0.8 acre excavated to 15 ft bgs for a total volume of approximately 21,000 cubic yards
- A total of 0.2 acre excavated to 20 ft bgs for a total volume of approximately 6,000 cubic yards
- Less than 0.01 acre excavated to 22 ft bgs for a total volume of approximately 200 cubic yards.

Some upper horizon/shallow soils (approximately 6,000 cubic yards) may be clean and suitable for reuse. If approved by EPA, such soils may be reused onsite as backfill, which would decrease the volume of offsite disposal and the volume of backfill as well as associated trucking. Deeper excavations will require either shoring or benching as excavation proceeds; the ultimate method of excavation stabilization will be determined by the contractor but will meet state and federal requirements.

The contractor will use a State of California licensed land surveyor to establish a field grid system to help locate key features at the site. The grid system will be locate the boundaries of areas of cultural and natural resources to be protected, soil samples, excavation limits, any discovered cultural resources, and other pertinent site features. Upon completion of the work, the contractor will work with a licensed land surveyor who will survey the final horizontal locations and elevations of site improvements, and final graded topography.

Work days and hours are assumed to be Monday through Friday from 7 a.m. to 6 p.m. with limited (non-grading) work on Saturdays (if necessary) from 9 a.m. to 5 p.m., to comply with the City of Larkspur's Noise Ordinance (Chapter 9.54). Disposal of impacted soils and fill materials generated as part of remediation would require approximately 2,400 trucks with an average of twenty 25-ton single trailer dump trucks arriving and leave the site each day for approximately 120 days of transportation and disposal. The excavated material will be wetted before being loaded to reduce the potential for dust generation during loading and transportation activities. Each truck will be inspected after filling to ensure that the affected soil/material is securely covered and that the tires and haul trucks are free of accumulated contaminated soil prior to leaving the project site.

Excavated areas will be backfilled with clean imported fill material and compacted to engineering specifications. Backfill material will be transported to the site over approximately the same period and with a similar number of trucks per day although the time period may be shifted to overlap with the offsite disposal trucking. Therefore, the proposed project is expected result in, on average, 40 vehicle round trips per day. It is unlikely that more than 40 trucks per day will enter and leave the site on most days; the actual number of trucks per day may be lower due to the availability of trucks and constraints at the site and the landfills.

The nature of the project is such that dump trucks off-hauling materials will not be traveling to and from the site in the late afternoon (landfills typically will not take dump trucks past mid-afternoon); therefore, no travel by dump trucks is anticipated between 4:30 p.m. and 6:00 p.m. Off-haul trucks will need to enter the site between 6:30 and 8:30 am. A few trucks can stage onsite prior to 6:30 a.m., but the site does not have the capacity for 20 trucks to stage. Trucks will not stage on public streets. A small number of trucks (likely a maximum of 10) will need to travel to the site between 6:30 and 8:30 am; this small number of trucks will have no material impact on the traffic on U.S. 101. Backfill materials are likely to be transported to the site during off-peak hours (after trucks off-hauling material leave the site) and are also unlikely to arrive onsite after 4:30 p.m. The contractor will be required to submit a Disposal Operations and Transportation Plan as described in Attachment D. One condition for the contractor will be that all truck traffic utilize the eastern intersection of Larkspur Landing Circle and Sir Francis Drake Boulevard to avoid traffic impacts to the western end of Larkspur Landing Circle at Sir Francis Drake.

The District understands that Larkspur Municipal Code Title 15, Chapter 20 indicates that grading can only occur Monday through Friday, excluding holidays, and from 7 a.m. to 6 p.m. The only exception to this rule is “when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in progress be continued until a specific phase is completed.” The site will be regraded to approximately pre-excavation conditions (graded to drain properly). The fill will generally conform to the guidelines set forth in the DTSC Fill Advisory (DTSC 2001). Backfilling of excavated areas will follow construction methodologies and use materials that meet engineering specifications appropriate for the site. Soils will be compacted to approximately 90–95 percent to ensure that low spots do not form over time. Suitable erosion controls, such as hydroseeding, will be provided during site restoration. The use of seed mixes of native plant species are preferred to prevent the spread of invasive species.

Based on waste characterization results, soils could be approved for disposal at a range of facilities. Class II soils could be disposed at one or more disposal facilities located in the Bay Area or Central Valley. The final decision on landfill selection will be based on contractor selection, the characterization results and resulting waste profile, and landfill acceptance.

Options for Class I (hazardous/TSCA waste) are more limited and include:

- Kettleman Hills Landfill in Kettleman City, California
- Buttonwillow Landfill in Buttonwillow, California.

Depending on restrictions that may exist at these facilities at the time of construction, out-of-state disposal facilities (e.g. Nevada) may also be considered

Local truck routes to the east Bay Area or Central Valley are anticipated to include to and from I-580 on Sir Francis Drake Boulevard with an alternate route being U.S. 101 to and from I-580. Trucks will enter and leave the site from Larkspur Landing Circle.

Site Management Practices

Several management plans will be developed as part of the site preparation phase including the Health and Safety Plan (HASP), which includes an emergency response plan; Disposal Operations and Transportation Plan; Decontamination Plan; Dust Control Plan; and Stormwater Pollution Prevention Plan (SWPPP). The specific regulatory requirements for each plan and how these plans will require project compliance with various state and federal regulations, including basic performance standards, are presented in Attachment D. Some specific components of these plans are described below.

A Construction SWPPP is required for the project since the work will be greater than 1 acre in size. The SWPPP will include best management practices (BMPs) that will address the potential for

discharge of sediment and other pollutants during the project (Attachment D). The exact locations, extent, nature, and details of the BMPs will be decided upon in consultation with, and subject to review and approval of, the City of Larkspur prior to the issuance of a Grading and Hauling permit.

If stockpiling of material is necessary, stockpiles will be stored within a bermed area on liner material, protected from stormwater run-on/runoff, and covered to prevent windblown dust. Any accumulated water would be collected from a low point within the bermed area and pumped into a portable storage tank. The contained water would be tested and treated, if necessary, before disposal.

The potential for offsite vapor or dust migration, as well as worker exposure, is minimized by measures that include excavation and loading techniques, maintaining soil moisture, covering all loads, effective haul truck decontamination, and onsite speed limits. Prevention of all dust generation is not possible, but the contractor will be required to minimize dust emissions during the work day to the maximum extent possible, and to comply with all Bay Area Air Quality Management District (BAAQMD) rules and regulations.² Specifically, contractor dust control measures will be in accordance with the BAAQMD standards and guidelines (BAAQMD 2012). BAAQMD list several measures, such as the following, which will be implemented, as applicable:

- All active construction areas (exposed working or parking surfaces, soil piles, and unpaved site transit routes) will be watered at least twice daily, and more often during windy periods, to minimize visible dust generation. Active areas next to the existing land uses (residential area) will be kept damp at all times.
- All unpaved access roads will be watered three times daily.
- Inactive portions of the site that have exposed soil surfaces will be wetted or treated with an approved dust suppressant.
- Observance of visible dust will result in an increase in water application. Nontoxic surfactants will be added to the water as necessary.
- Drop heights of materials will be minimized. Dust-proof chutes will be used to load debris into trucks if applicable.
- Water spray will be applied at the source during clearing, grubbing, demolition, excavation, grading, waste loading, or in response to wind conditions.
- Stockpiles of debris, soil, or other material will be covered or wetted to control windblown dusts.
- All haul truckloads of waste leaving the site will be covered.
- The wheels and tires of all haul trucks and other construction equipment leaving the site will be decontaminated by brushing, power washing, or wheel washes as necessary to prevent offsite transport on tires.
- All vehicle speeds on unpaved roads on the site will be limited to 10 to 15 mph as necessary to minimize visible dust generation.
- Idling times will be minimized either by shutting equipment off when not in use or reducing maximum idling time to 5 minutes.
- Clear signage will be provided for construction workers and contract haul trucks at all access points.

² <http://www.baaqmd.gov/Divisions/Planning-and-Research/Rules-and-Regulations.aspx>

- Construction equipment will be maintained and properly tuned in accordance with manufacturer’s specifications.
- Dumpsters or other closable containers will be used to contain solid waste.
- Excavation and loading work will be modified or suspended during high wind conditions (e.g., sustained wind speeds of 25 mph or more) that render control measures to be ineffective in preventing offsite migration of visible dust.
- Watering to control dust should not result in ponded water or runoff. Water sweepers will vacuum up excess water to avoid runoff-related impacts.
- All paved access roads, parking areas, and staging areas will be swept daily with water sweepers.
- Equipment and staffing will be provided during normal working hours for watering of all exposed or disturbed soil surfaces sufficient to suppress dust plumes.
- Adjacent streets will be swept of all soil and debris generated from the site work activities.

Dust monitoring would be implemented during construction to ensure compliance with BAAQMD requirements and also to minimize the migration of contaminants offsite during remedy implementation; monitoring devices would be placed, at minimum, at the upwind and downwind fence lines (see Attachment D). The BAAQMD provides the national PM10 (particulate matter less than 10 microns) air quality guideline of 150 µg/m³, as well as a California guideline of 50 µg/m³ averaged over 24 hours (BAAQMD 2012). PM10 particle emissions will be measured upwind and downwind of work areas, and exceedance of BAAQMD standards will trigger implementation of additional dust control measures.

Field activities will be governed by a site-specific HASP specifying practices that will be employed by cleanup workers to avoid physical and chemicals exposures during remedial activities, including air monitoring.

Construction Schedule

An approximate schedule is provided below. Construction is anticipated to begin in the summer of 2017.

Mobilization	1 week
Site Preparation	2 weeks
Soil and Debris Removal, Transportation, Disposal, and Backfilling	20 weeks (assumes 6-day weeks and concurrent excavation, offloading, and importing operations)
Restoration/Stabilization	2 weeks
Demobilization	1 week
Total	26 weeks (6 months)

The construction activities will be staged to avoid work near environmentally sensitive areas (e.g., wetlands or waters), and implemented outside of the wet season to avoid any impacts from construction activities as well as eliminate the need to capture and/or divert surface water drainage.

Other Permits and Project Approvals

EPA will review and approve the remedial plan and provide overall oversight and site closure. Permits that will likely be required, but are not necessarily limited to, include the following:

- City of Larkspur Grading and Hauling Permit³
- Construction General Permit Order 2009-0009-DWQ (Construction Stormwater Permit)

References

BAAQMD. 2012. Final California Environmental Quality Act Air Quality Guidelines. Updated May 2012. http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/baaqmd-ceqa-guidelines_final_may-2012.pdf?la=en. Accessed February 2016. Bay Area Air Quality Management District, San Francisco, CA.

City of Larkspur. 1990. *Larkspur General Plan 1990-2010*. City of Larkspur, CA. December.

DTSC. 2001. Information Advisory, Clean Imported Fill Material. California Department of Toxic Substances Control. October.

Kennedy Jenks, Inc. 2016. Site Characterization Work Plan – Former Wastewater Treatment Plant, Larkspur, California. September 21.

Kennedy Jenks, Inc. 2017. Updated Application for Cleanup of Polychlorinated Biphenyls – Former Wastewater Treatment Plant, Larkspur, California. April.

³ Because the excavation exceeds 1,000 cubic yards, the project will be subject to Grading Permit review by the Larkspur Planning Commission per Larkspur Municipal Code 15.20.120 (*Review and Consideration of Large Scale Plans*). The District understands this is different from the administrative Grading and Hauling Permit and that the issuance for this project will involve a discretionary approval process.

ENVIRONMENTAL IMPACT ANALYSIS:

1. Aesthetics

Project Activities Likely to Create an Impact:

Removal of impacted soils and import of clean fill could only create a temporary aesthetic impact during cutting and filling activities. Specifically, the following activities could impact aesthetics:

- Excavating of contaminated soil and fill/debris.
- Loading of contaminated soil and fill/debris onto dump trucks.
- Transporting of excavated soil and co fill/debris to appropriate disposal facilities.
- Transporting, onsite stockpiling, and handling of imported backfill materials
- Site grading and revegetating activities.

Description of Baseline Environmental Conditions:

Most of the site is a nearly level area, sloping gently to the south as a result of grading the site after demolition of the District wastewater treatment plant in 1998. Site structures have been removed and the site consists of predominately vacant unpaved land. Currently, the site is actively used as an operations base for the District, and includes two modular buildings and an area for sewer maintenance and operations equipment, vehicles, and materials staging.

The project site is located in a bowl-shaped valley and on south- and southwest-facing hills that surround the valley, north of the Corte Madera Creek estuary to San Francisco Bay. The slopes of the northern and eastern boundaries are covered with mature trees and native grasses, part of the coast live oak woodland and grassland that characterize the area above the site to the north and east. Miwok Park, including Tubb Lake, is northeast of the site. The western edge of the project site is bound by the east end of Larkspur Landing Circle East and lined with street trees. Sweet gum (*Liquidambar styraciflua*) trees planted along the Brick Kiln property's northern edge define a portion of the project site's southeastern boundary.

The project site has extensive views of the Corte Madera Creek estuary and San Francisco Bay. The Golden Gate Ferry Terminal at the mouth of Corte Madera Creek is southwest of the site, and Mount Tamalpais is visible further to the southwest. The project site is at a prominent location along East Sir Francis Drake Boulevard and clearly visible from many vantage points such as East Sir Francis Drake Boulevard, Larkspur Landing Circle East, and the Golden Gate Ferry Terminal, as well as from incoming and outbound ferries. The site is visible in the distance from the Corte Madera Creek marshes and the Greenbrae Boardwalk.

Analysis as to whether or not project activities would:

- a. Have a substantial adverse effect on a scenic vista.

Impact Analysis:

The soil removal and filling activities will not obstruct the view of scenic vistas and therefore will have no impact.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

Impact Analysis:

There are no important scenic resources on the project site. The property is the former location of the District wastewater treatment plant, which was demolished in 1998.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Substantially degrade the existing visual character or quality of the site and its surroundings.

Impact Analysis:

Currently, the site is actively used as an operations base for District. The soil removal and filling activities will occur in areas that were previously disturbed by excavation and grading activities related to the construction and demolition of the former wastewater treatment plant, and activities are currently ongoing at the site. Although the remedial work will increase site activity, it will not degrade the existing visual quality of the site or surroundings.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Impact Analysis:

The soil removal and filling activities will only occur during daytime hours and will not contribute to glare or a substantial new light source.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

2. Agricultural and Forestry Resources

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The project site does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as defined by the Farmland Mapping & Monitoring Program of the State of California, Department of Conservation. The project would not call for the conversion of any land from agricultural to non-agricultural use. Additionally, the project is surrounded by lands that are already developed, approved for development, or designated as parkland area and, therefore, would not increase development pressure on agricultural lands by extending infrastructure into agricultural areas. Therefore, the project would have no impact on agricultural resources.

Analysis as to whether or not project activities would:

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

Impact Analysis:

The project site does not contain any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as defined by the Farmland Mapping & Monitoring Program of the State of California, Department of Conservation.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Conflict with existing zoning or agriculture use, or Williamson Act contract.

Impact Analysis:

The project would not call for the conversion of any land from agricultural to non-agricultural use.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Codes section 51104(g))?

Impact Analysis:

The project would not conflict with existing zoning or cause rezoning of forest land or timberland.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

d. Result in the loss of forest land or conversion of forest land to non-forest use?

Impact Analysis:

The site does not contain forest land.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

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

Impact Analysis:

The site does not contain forest land nor is it zoned for agricultural uses.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

3. Air Quality

Project Activities Likely to Create an Impact:

- Excavating and stockpiling of contaminated soils and debris⁴
- Reconstructing of affected areas. Includes backfilling and grading
- Loading of contaminated media including soil and construction debris onto dump trucks
- Transporting of excavated soil to appropriate disposal facilities on the basis of waste characterization
- Transporting, onsite stockpiling, and handling of imported backfill materials.

⁴ Will require the use of an excavator, front end loader, grader, and/or other pieces of heavy machinery.

Description of Baseline Environmental Conditions:

The proposed project is located within the jurisdiction of BAAQMD. The BAAQMD falls within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB has been designated by the California Air Resources Board (CARB) as being in non-attainment with California Ambient Air Quality Standards for ozone, particulate matter less than 2.5 microns (PM_{2.5}), and particulate matter less than 10 microns (PM₁₀). EPA has designated the SFBAAB as being in non-attainment with Federal Ambient Air Quality Standards for ozone and PM_{2.5} (CARB 2016).

Analysis as to whether or not project activities would:

- a. Conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis:

The potential for offsite vapor or dust migration, as well as worker exposure, is minimized by measures that include excavation and loading techniques, maintaining soil moisture, covering all loads, effective haul truck decontamination, and onsite speed limits. Prevention of all dust generation is not possible, but the contractor will be required to minimize dust emissions during the work day to the maximum extent possible and to comply with all BAAQMD rules and regulations. Specifically, contractor dust control measures will be in accordance with the BAAQMD standards and guidelines (BAAQMD 2010a, 2012). Measures that will be implemented during remediation to reduce dust generation are listed below in 3g.

Potential air quality impacts were assessed according to the 2010 BAAQMD CEQA Guidelines (BAAQMD 2010a). These guidelines include significance thresholds for criteria air pollutant emissions from project operations. The guidelines specify the following significance thresholds for daily and annual criteria air pollutant emissions from project construction:

- PM₁₀ = 82 lb/day; 15 ton/year
- PM_{2.5} = 54 lb/day; 10 ton/year
- Reactive organic gases (ROG) = 54 lb/day; 10 ton/year
- Oxides of nitrogen (NO_x) = 54 lb/day; 10 ton/year
- PM₁₀ from fugitive dust: National PM₁₀ (respirable dust) air quality guideline of 150 µg/m³ and California guideline of 50 µg/m³ averaged over 24 hours (BAAQMD 2012).

Project emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version CalEEMod.2016.3.1, which was developed for the California Air Pollution Control Officers Association (CAPCOA 2016). The model calculates emissions for various activities associated with land use development and construction projects, based on the size and type of the activity. The CalEEMod input and output files are presented in Attachment E. Project emissions are summarized below.

If stockpiling of material is necessary, stockpiles will be stored within a bermed area on liner material, protected from stormwater run-on/runoff, and covered to prevent windblown dust. Any accumulated water would be collected from a low point within the bermed area and pumped into a portable storage tank. The contained water would be tested and treated, if necessary, before disposal.

Total Project Emissions

Pollutant	Maximum Emissions (ton/year) ^a	Thresholds (ton/year)	Maximum Emissions (lb/day) ^a	Thresholds (lb/day)	Above Threshold?
PM10	0.77 (1.55)	15	2.95 (3.83)	82	No
PM2.5	0.44 (0.86)	10	2.02 (2.12)	54	No
ROG	0.19 (0.19)	10	3.97 (3.97)	54	No
NOx	2.5 (2.5)	10	45.4 (45.4)	54	No

^a Mitigated values presented. Unmitigated values in parentheses.

Construction equipment emissions are accounted for in the emission inventory that is the basis for the 2010 Clean Air Plan (CAP; BAAQMD 2010b). Combustion emissions from vehicles and equipment used for the project would not exceed the significance thresholds listed above from the BAAQMD guidelines. Furthermore, fugitive dust emissions would be controlled with the implementation of construction BMPs (listed below under [b]). Thus, the emissions would be less than significant, ensuring support for the primary goals of the CAP (BAAQMD 2010b).

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis:

As noted above, project activities that have the potential to impact air quality can be characterized as construction activities because of the short duration of the project and use of construction equipment. As demonstrated above, estimated emissions are below significance thresholds listed in the BAAQMD guidelines.

The following construction BMPs are standard measures and will be detailed in contractor specifications and implemented, as applicable, as part of the project to control fugitive dust:

- All active construction areas (exposed working or parking surfaces, soil piles, and unpaved site transit routes) will be watered at least twice daily, and more often during windy periods, to minimize visible dust generation. Active areas next to the existing land uses (residential area) will be kept damp at all times.
- All unpaved access roads will be watered three times daily.
- Inactive portions of the site that have exposed soil surfaces will be wetted or treated with an approved dust suppressant.
- Observance of visible dust will result in an increase in water application. Nontoxic surfactants will be added to the water as necessary.

- Drop heights of materials will be minimized. Dust-proof chutes will be used to load debris into trucks if applicable.
- Water spray will be applied at the source during clearing, grubbing, demolition, excavation, grading, waste loading, or in response to wind conditions.
- Stockpiles of debris, soil, or other material will be covered or wetted to control windblown dusts.
- All haul truckloads of waste leaving the site will be covered.
- The wheels and tires of all haul trucks and other construction equipment leaving the site will be decontaminated by brushing, power washing, or wheel washes as necessary to prevent offsite transport on tires.
- All vehicle speeds on unpaved roads on the site will be limited to 10 to 15 mph as necessary to minimize visible dust generation.
- Idling times will be minimized either by shutting equipment off when not in use or reducing maximum idling time to 5 minutes.
- Clear signage will be provided for construction workers and contract haul trucks at all access points.
- Construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications.
- Dumpsters or other closable containers will be used to contain solid waste.
- Excavation and loading work will be modified or suspended during high wind conditions (e.g., sustained wind speeds of 25 mph or more) that render control measures to be ineffective in preventing offsite migration of visible dust.
- Watering to control dust should not result in ponded water or runoff. Water sweepers will vacuum up excess water to avoid runoff-related impacts.
- All paved access roads, parking areas, and staging areas will be swept daily with water sweepers.
- Equipment and staffing will be provided during normal working hours for watering of all exposed or disturbed soil surfaces sufficient to suppress dust plumes.
- Adjacent streets will be swept of all soil and debris generated from the site work activities.

Since emissions from gasoline and diesel-fueled vehicles and equipment are below significance thresholds, and fugitive dust emissions would be controlled with BMPs, the project would not result in a violation of an air quality standard or contribute significantly to an existing or projected air quality violation.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Impact Analysis:

As described above, ozone precursor emissions from construction activities are accounted for in regional air quality planning. Project activities would not conflict with or obstruct the implementation of air quality plans or create a violation of emissions standards. Furthermore, emissions would be temporary and short-term in

nature; therefore, there would be no net increase in ozone precursor emissions during project activities. As presented in items (a) and (b) above, emissions would be below the significance thresholds presented in the BAAQMD guidelines. Therefore, the project would not add a cumulatively considerable net increase of criteria pollutants, and the impact would be less than significant.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

d. Expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis:

BAAQMD (2010a) defines sensitive receptors as the elderly, children, infirm, or persons with particular sensitivity to air pollutants. The closest sensitive receptors to the project site are (i) the Children’s Cottage Cooperative preschool and adjacent park near the northwest corner of the project site; (ii) residential developments adjacent to the project site to the north and east; and (iii) the apartments further north along Lincoln Village Circle.

Health Risks of PCBs

Dust control measures are the primary means of controlling potential exposure to chemicals during remediation activities. Dust monitoring would be implemented during construction to ensure compliance with BAAQMD requirements and also to minimize the migration of contaminants offsite during remedy implementation. The BAAQMD provides the national PM10 (respirable dust) air quality guideline of 150 µg/m³ as well as a California guideline of 50 µg/m³ averaged over 24 hours (BAAQMD 2012). PM10 particle emissions will be measured upwind and downwind of work areas; exceedance of BAAQMD standards will trigger implementation of additional dust control measures. Essentially, site management practices will require attainment of the dust trigger and action levels.

Because concentrations of dust from remediation activities will not be allowed to exceed the PM10 trigger and action levels, this range of dust concentrations can be used to estimate the maximum concentrations of PCBs that could be present in dust at the site boundary during remediation. PCB in dust concentrations were calculated based on both the average and maximum detected PCB concentration (Kennedy Jenks, Inc. 2017; Table 17 in Attachment C) as shown below.

Range of PCB Concentrations in Dust at the Trigger and Action Level

Parameter	Unit	Average (reasonable)		Maximum (worst case)	
		Trigger Level	Action Level	Trigger Level	Action Level
BAAQMD Dust Limit	µg/m ³	50	150	50	150
PCB Concentration in Soil	µg/kg	930	930	73,000	73,000
Conversion Factor	µg/kg	1E+09	1E+09	1E+09	1E+09
Estimated PCB Concentration in Dust ^a	µg/m ³	4.65E-04	1.4E-04	3.65E-03	1.10E-02

Range of PCB Concentrations in Dust at the Trigger and Action Level

Parameter	Unit	Average (reasonable)		Maximum (worst case)	
		Trigger Level	Action Level	Trigger Level	Action Level
Ambient Air Regional Screening Level for adult residents (RSL) ^b	µg/m ³	4.9E-03	4.9E-03	4.9E-03	4.9E-03
Exceeds RSL?	-	No	No	No	Yes
Site-Specific Risk-Based Screening Level for children (RBSL) ^c	µg/m ³	7.7E-02	7.7E-02	7.7E-02	7.7E-02
Exceeds RBSL?	-	No	No	No	No

^a PCB concentrations in dust (µg/m³) = dust trigger level (µg/m³) x PCB concentration (µg/kg) / conversion factor (µg/kg).

^b Ambient Air Regional Screening Level (USEPA 2016) for residential exposures.

^c Site-Specific Risk-Based Screening Level for children (calculations in Attachment F).

The estimated PCBs in dust concentrations were compared to the risk-based ambient air regional screening level (RSL; USEPA 2016) to assess the potential for PCB exposure to workers and offsite receptors during remediation activities. Both a reasonable and protective scenario are provided by using the average concentrations and maximum detected concentrations of PCBs in soil, respectively. Furthermore, the use of the residential ambient air RSL for PCBs is conservative as it assumes exposure 24 hours per day for 26 years (as compared to construction activities, which are typically less than 1 year (approximately 6–8 months for this project)).

The average concentration of PCBs used to estimate the dust concentrations indicates no adverse risks to workers and offsite adult residential receptors. Although the worst case scenario for dust at the action level of 150 µg/m³ (based on the maximum detected PCB concentration) is estimated to exceed the action level, this level of risk is unlikely because the maximum concentration is from a single location and the remainder of the locations are much lower in concentration, the exposures would occur over 8 months and not 26 years, and the BMPs to control dust are likely to result insignificantly lower dust concentrations. Additionally, the dust concentrations are not expected to be sustained at 150 µg/m³ as a California guideline of 50 µg/m³ is expected to be used as the trigger for implementing additional dust control measures.

A daycare center as well as residences where children may be present are adjacent to the site. EPA does not provide ambient air RSLs specifically aimed at protecting of children. Therefore, an assessment of potential risks to children from exposure to PCBs in dust was conducted. A site-specific risk-based screening level (RBSL) was calculated assuming a 1-year construction period (with a frequency of 5 days/week). The site-specific RBSL of 7.7E-02 µg/m³ was estimated to be protective of children (calculations presented in Attachment F). The estimated PCB concentrations in dust are well below site-specific RBSL for children and, therefore, no unacceptable risks to children are expected during construction activities at the project site. Note, the ambient air EPA RSL for adult residents is more conservative than the site-specific RBSL for children and, therefore, would be protective of children as well.

Diesel Particulate Matter

The BAAQMD guidance (2017) reports that construction-related activities could result in the generation of toxic air contaminants (TACs), specifically diesel particulate matter (DPM), from on-road haul trucks and off-road equipment exhaust emissions. The generation of TAC emissions in most cases are temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors (children) to substantial concentrations. Studies reported

by CARB have shown concentrations of mobile-source DPM emissions reduce dramatically with distance from the road, primarily in the first 100–150 m (CARB 2005). The BAAQMD screening guidance (2010c), which lays out a qualitative framework for assessing risks from DPM, reports that for a project area of 2 acres, the minimum offset distance from the project fence line to ensure that a sensitive receptor would have a less than significant impact is 100 m. Although a daycare is on the north side of the site, about 50 m from the edge of the planned excavation area, the trucks will be staged mainly in the southern part of the site, which is more than 100 m away from the daycare. There is a retaining wall physically separating the daycare and nearby residents from the site, minimizing some of the emissions going offsite. This project is considered small in size (less than 2 acres) with a low volume of trucks (maximum of 40 trucks) entering and exiting the site per day. Therefore, the incremental DPM exposures to nearby residents is minimal (compared to DPM from regular traffic on Larkspur Landing Circle and Sir Francis Drake Boulevard) and not significant. In addition, to reduce DPM exhaust emissions, the Basic Construction Mitigation Measures (Tables 8-2 and 8-3 of the BAAMQD 2017) will be implemented during construction. These measures include minimizing idling times while onsite. The majority of the diesel emissions estimated for this project will actually occur during transportation of materials to and from the site (i.e., offsite).

Health risks from DPM exposures during construction were not quantitatively evaluated for the Initial Study because 1) of the qualitative factors discussed above; and 2) current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary (in this case about 6–8 months) and highly variable nature of construction activities. The California Office of Health Hazard Assessment (OEHHA 2016) provides only a chronic reference exposure level (REL) for diesel exhaust and not an acute or subchronic REL. This results in difficulties with producing accurate estimates of health risk for short-term construction activities.

The BAAQMD guidance (2017) recommends characterizing potential health effects from exposure directly to PM_{2.5} exhaust through comparison to the threshold of significance. The amount of onsite diesel-generated PM_{2.5} exhaust (assuming that all onsite diesel PM_{2.5} exhaust is diesel PM) for this project is estimated to be 0.085 ton/year (for mitigated and unmitigated construction; Attachment E). The estimated PM_{2.5} exhaust emissions are several orders of magnitude below the BAAMQD threshold of 10 tons/year. As a comparison, the San Luis Obispo Air Pollution Control District (SLO County APCD 2012) provides a threshold of significance specifically for DPM and construction activities of 0.13 ton/quarter for projects lasting over one quarter based on the California Health & Safety Code and the CARB Carl Moyer Guidelines; the PM_{2.5} exhaust emissions for the remediation project are estimated to be significantly below this threshold as well.

The project is not expected to expose these sensitive receptors to substantial pollutant concentrations for the following reasons:

- Only minor amounts of soil excavations would occur on a daily basis.
- A limited number of construction vehicles or equipment would operate at any time.
- The project activities are short-term and would last approximately 8 months.
- Combustion emissions from vehicles and equipment are below the significance thresholds from the BAAQMD guidelines.
- Estimated risks from PCBs are low (below risk-based levels) and significant risks from DPM are unlikely.
- Standard construction BMPs and BAAQMD Basic Construction Mitigation Measures, such as using a water truck and covering of soil stockpiles and minimizing idle times, would be used for dust suppression and to control emissions and exposures.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

e. Create objectionable odors affecting a substantial number of people.

Impact Analysis:

In general, odors from construction activities are those associated with diesel exhaust from the heavy equipment dust, and are difficult to assess, as the identification and degree of its objectionable nature is very subjective and varies from individual to individual. The majority of project activities would be conducted at a substantial distance from any receptors, as mentioned above, and would be short in duration (approximately 8 months). In addition, the measures taken to control dust emissions will also help control odors, if any are present.

Due to the nature of the project scope of work and the project controls that would be implemented, the odor impacts related to construction activities would be less than significant.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

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4. Biological Resources

Project Activities Likely to Create an Impact:

- Excavating and stockpiling of contaminated soil and debris using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, or grader)
- Loading the contaminated media onto dump trucks
- Transporting and appropriate offsite disposal of excavated soil and debris
- Importing of clean soil
- Backfilling and restoration of all excavated areas.

Description of Baseline Environmental Conditions:

The biological resources of the project site have been substantially modified by prior use of the site. In the 1850s, an early brick kiln stripped off the topsoil (and vegetation) to expose clay deposits and used the topsoil to fill tidal inlets at the site. A brick yard was constructed at the site around 1870. The brick yard operator built an earthen dam and impounded what is now known as Tubb Lake. In 1949, the District constructed a wastewater treatment facility on the site that operated until 1985. In 1999–2000, the treatment facility was removed and the site was graded and recontoured. The biological resources present on the site today represent several waves of colonization and succession. Some habitats that were once present (e.g., salt marsh) have been eliminated by prior activities. The current biological resources of the project site have been surveyed several times to describe the biological communities present and cited in a previous initial study for the project site (Turnstone Consulting 2004a). The survey reports are on file with the City of Larkspur Planning Department and are summarized here. A recent wetland delineation was completed (WRA 2017), and a California Natural Diversity Database (CNDDDB 2017) for the San Rafael and San Quentin quads, at or near where the project is located⁵, was completed. Approximately 25 percent of the total area of the site is paved. Based on the previous surveys and the recent wetland delineation, there are five plant communities on the unpaved portion of the site. The largest is grassland on fill, which occupies about 39 percent of the site. The others are landscaped/disturbed (about 17 percent), grassland with oaks (about 13 percent), coast live oak woodland (about 6 percent), and wetland (less than 1 percent).⁶

⁵ The project site is within the San Rafael quad.

⁶ Total of all percentages may not equal 100 due to rounding.

Analysis as to whether or not project activities 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.

Impact Analysis:

In preparing this assessment, special status species were evaluated using the CNDDDB (2017) for the San Rafael and San Quentin quads. CNDDDB records (Attachment G) include federal special status species, State special status species, California Department of Fish and Wildlife (CDFW) special status species, and California rare plant species. CNDDDB shows records for 64 special status plant species or communities within the quads, including four federally endangered species: Tiburon jewelflower, Tiburon paintbrush, two-fork clover, and white-rayed pentachaeta and two threatened species: Marin western flax and Tiburon mariposa lily. However, none of the 64 special status plant species/communities are found on the site of the proposed project, except with the potential for presence of the white-rayed pentachaeta. A detailed field survey was performed for the white-rayed pentachaeta during its blooming season; it was not observed and is not believed to be present (Turnstone Consulting 2004b, as cited by Turnstone Consulting 2004a).

CNDDDB shows records for 25 special status animals within the San Rafael and San Quentin quads, including four federally endangered species: California clapper rail, northern spotted owl, San Bruno elfin butterfly, and salt marsh harvest mouse. None of these are found on the project site as there are no suitable habitats. The California clapper rail and salt marsh harvest mouse are only found in salt marshes. None of these habitats occur on the project site. The San Bruno elfin butterfly inhabits rocky outcrops in coastal scrub and feed on stonecrop (USFWS 2016), neither of which is present on the project site. Although the CNDDDB search indicated some special status fish and amphibian species, these species are not expected to be found at the project site because there is no aquatic habitat onsite to support them. In addition, although Tubb Lake is not on the project site, it is immediately adjacent, therefore the possible occurrence of the California red-legged frog there has been evaluated. In 1999, the U.S. Fish and Wildlife Service (USFWS) issued a finding that no individuals have been found within five miles of the project site (Renshaw 1999a,b, as cited by Turnstone Consulting 2004a). The CNDDDB results for San Rafael (where the site is located) does not show any records for California red-legged frog. In addition, work on the site will not impact aquatic habitats and drainages on the site because the work will: 1) avoid to the extent possible environmentally sensitive areas (e.g., wetlands or waters); or 2) where necessary, be conducted in accordance with a permit issued by the U.S. Army Corps of Engineers (USACE) and/or the San Francisco Bay Regional Water Quality Control Board (RWQCB) (see Mitigation Measure Bio1). Furthermore, construction activities will be staged to avoid work near environmentally sensitive areas (e.g., wetlands or waters), and implemented outside of the wet season to avoid any impacts from construction activities as well as eliminate the need to capture and/or divert surface water drainage. With implementation of Mitigation Measure Bio1, impacts to biological resources would be less than significant.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- 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.

Impact Analysis:

Based on site visits conducted in 1999, 2004, and 2017, there are no riparian habitats and no aquatic invertebrate species on the project site (Renshaw 2004; Turnstone Consulting 2004b, as cited by Turnstone Consulting 2004a; WRA 2017). There are no other sensitive natural communities identified in local or

regional plans, policies, or regulations, or by the California Department of Fish and Game or USFWS (CNDDDB 2017). Therefore, the project would have no effect on riparian habitat or other sensitive natural community.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impact Analysis:

A wetland delineation was completed for the site in February 2017 (WRA 2017). In consultation with the U.S Army Corps of Engineers, the map was updated in June 2017. The site contains approximately 0.12 acre that meets the criteria to be potential wetlands and 0.01 acre/194 linear ft that meets the criteria to be potential non-wetland waters. All potential wetlands and non-wetland waters delineated within the site are considered to be potential jurisdictional features under Clean Water Act (CWA) Section 404. Upland ditches were also identified, although these features are not considered to be potential jurisdictional features under CWA Section 404.

On February 14, 2017, two seasonal wetlands were observed onsite, SW1 and SW2 (Attachment B, Figure 2). SW1 is a small, seep wetland located at the base of a steep slope at the north-central boundary of the site. Although groundwater seepage appears to be a primary source of wetland hydrology for this feature, two concrete upland ditches drain to this feature and are assumed to provide an additional hydrological input. A narrow, manmade, gravel-bottomed upland ditch connects the SW1 to a drop inlet approximately 100 ft to the south, where the water enters the underground stormwater system. SW2 is a seasonal wetland located in a flat area at the base of a steep slope in the eastern portion of the site, which is partially in the actively used and maintained area and partially outside of this area. The primary hydrological source for this feature appears to be overflow from Tubb Lake, a small manmade reservoir located northeast of the project area. This feature drains into the upland ditch located in the eastern portion of the site.

A single ephemeral drainage (ED1; Attachment B, Figure 2) observed at the site is an approximately 2-ft-wide channel that drains overflow from Tubb Lake. As stated above, flow from this channel drains into SW2; however, this channel also connects to the perimeter upland ditch, and during the February 14, 2017, site visit, runoff was observed flowing from the ephemeral channel into the upland ditch. Considering that the bottom of this channel was mostly unvegetated and bed and bank indicators of Ordinary High Water Mark (OHWM) were observed, this feature was classified as a non-wetland water.

The extent of the planned remediation does not overlap with any of the potential jurisdictional features under CWA Section 404 (SW1, SW2, and ED1) as shown in Attachment B, Figure 2. Any stockpiling activities would occur away (at least 25 ft) from the wetlands and ephemeral drainage and those areas will be protected by fencing during the remediation activities, which will exclude construction equipment from those areas. Work on the site will avoid to the extent possible environmentally sensitive areas (e.g., wetlands or waters). Furthermore, construction activities will be staged to avoid work near environmentally sensitive areas (e.g., wetlands or waters), and implemented outside of the wet season to avoid any impacts from construction activities as well as eliminate the need to capture and/or divert surface water drainage. Transport of materials removed from the site during project implementation would occur on existing roadways, and disposal would occur at existing facilities that are licensed for accepting waste. However, as a mitigation measure, remediation will not commence at the site until the USACE provides a jurisdictional determination and concurrence is received from the RWQCB, and remediation will not commence until CWA

401 or 404 permits are obtained, if deemed necessary (see Mitigation Measure Bio1). With implementation of Mitigation Measure Bio1, impacts to biological resources would be less than significant.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- 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.

Impact Analysis:

Prior use and disturbance of the site has greatly reduced habitat value and use of the site by wildlife. Nevertheless, there are small resident populations of birds, small mammals, reptiles, and insects. When the project is landscaped following construction, the habitat values of the site could increase, depending on the species planted. Thus, while there is limited daily use of the site by wildlife, the project would not interfere with the movement of any resident or migratory wildlife, or with established migratory corridors, or impede the use of native wildlife nursery sites. The proposed project would not interfere with the movement of any resident or migratory fish in the Corte Madera Channel.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact Analysis:

As discussed above, the habitat values of the site have been severely degraded by prior use of the site. No development is planned for this project and the site will be restored to existing conditions at project completion.

The City's Heritage Tree Ordinance⁷ prohibits removal of heritage trees without a permit. Trees on the project site are located on the steep hillsides, above the former quarry, and on the western perimeter of the site. In 2004, a tree inventory and assessment that was conducted in 2001 was updated (Ralph Osterling Consultants 2004, as cited by Turnstone Consulting 2004a). The assessment update showed that 59 heritage trees (as defined by the ordinance) were present. This group consists of 47 coast live oaks (native), four willows (native), three Monterey pines (native), two stone pines, two plums, and one deodar cedar. Implementation of the proposed project would not result in the removal of any trees.

Based on the above, there would be no conflict with local policies or ordinances protecting biological resources and no impact would occur.

⁷ City of Larkspur Municipal Code Chapter 12.16

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- 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.

Impact Analysis:

There are no adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plans applicable to the project site. Therefore, the project would not conflict with any adopted plans related to habitat on the project site.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

Mitigation Measure Bio1. As a mitigation measure to reduce loss of wetland resources, remediation will commence at the project site after verification of wetland delineation by the USACE and concurrence from the RWQCB. In addition, remediation will not commence until CWA 401 or 404 permits are obtained, if deemed necessary by the USACE or RWQCB, and the District will comply with any conditions specified in the permits. If wetlands will be impacted, additional consultation with the Federated Indians of Graton Rancheria (FIGR) will be necessary.

References Used:

1. CNDDDB. 2017. California Natural Diversity Database. Wildlife & Habitat Data Analysis Branch, Department of Fish and Game. January 4.
2. Ralph Osterling Consultants, Inc. 2004. Letter to Michael Hooper, Campus Properties, LLC, Updated Tree Data for 2000 Larkspur Landing Circle. April 8. (as cited in Turnstone Consulting 2004a)
3. Renshaw, D.L. 1999a. Letter to Ken Sanchez, USFWS Ecological Services, Sacramento, CA. May 26.
4. Renshaw, D.L. 1999b. Letter to Hamid Shamspour, City of Larkspur. July 16. (as cited in Turnstone Consulting 2004a)
5. Renshaw, D.L. 2004. Letter to Barbara Westree, Turnstone Consulting. April 21.
6. Turnstone Consulting. 2004a. Expanded Initial Study, 2000 Larkspur Landing Circle. October 20.
7. Turnstone Consulting. 2004b. Memorandum to Nancy Kaufman, Larkspur Planning Director, Biological Resources Analysis for 2000 Larkspur Landing Circle Project. June 9. (as cited in Turnstone Consulting 2004a)
8. USFWS. 2016. San Bruno Elfin Butterfly. September 16. https://www.fws.gov/sacramento/es_species/Accounts/Invertebrates/es_san-bruno-elfin-butterfly.htm. U.S. Fish and Wildlife Service.
9. WRA. 2017. Delineation of the Waters of the U.S. 2000 Larkspur Landing Circle, Larkspur, California. March. Initial submittal in February 2017; updated map submitted in June 2017.

5. Cultural and Tribal Cultural Resources

Project Activities Likely to Create an Impact:

- Excavating and stockpiling of contaminated soil and debris using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, or grader)

Description of Baseline Environmental Conditions:

The project site contains no significant historic architectural resources. The existing structures on the site include two temporary trailer office structures; equipment storage and maintenance sheds; two fuel dispensers and aboveground storage tanks; a pump house for the force main carrying sewage to the Central Marin wastewater treatment plant; and a parking lot for District employees. The rest of the site is vacant, predominantly unpaved land. None of the permanent structures exhibit important architectural styles and none is of sufficient age (normally 50 years) to be considered for historic designation.

There are known prehistoric and historic archaeological materials and tribal cultural resources in the southern portion of the project site. Holman & Associates (2000) previously extensively investigated the site designated CA-MRN-255/H, which is partly on the project site, with the remainder located on the adjacent Remillard Brick Kiln property to the southeast. The extensive investigations documented in the reports prepared by Holman & Associates provide sufficient information about the archaeological resources on the project site; no additional archaeological investigation is required. The investigations by Holman & Associates (2000) are summarized and incorporated by reference into the following discussion. The District recognizes that the previous archaeological reports were prepared prior to enactment of Assembly Bill No. 52 (AB 52), which established a new category of resources under CEQA called “tribal cultural resources” that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation.

The prehistoric archaeological site CA-MRN-255/H on the project site and Brick Kiln property was probably originally adjacent to wetlands that existed on the San Francisco Bay shore, before dredging, filling, and erosion in the past 200 years dramatically changed the Bay shoreline and the location and amount of wetlands. The site in prehistoric times would have included oak woodlands, grasslands, marsh, and mudflats, and would have provided sources of food and materials for prehistoric residents both from the Bay and wetlands, and from the nearby hills and oak woodlands. A Native American shell midden was identified on the site in 1955. Other archaeological investigations conducted during the 1970s and 1980s showed an intact Native American midden to a depth of at least 3 ft on the southern portion of the project site.

Archaeological investigations conducted by Holman & Associates in 1998 through 2000 for Sanitary District No. 1 found remnants of an intact midden and a redeposited midden, as well as the remains of three partial Native American burials, at depths to about 6 ft on the project site, which are considered tribal cultural resources.

The three Native American burials recovered were all highly fragmented and incomplete. No artifacts were associated with any of the burials. Additional non-associated bone fragments found in several areas of the archaeological investigation indicate that there were probably additional burials on the site that were disturbed during prehistoric and/or historic periods. The recovered burials were treated as required by California Statute, including consultation with the County Coroner and the Native American Heritage Commission.

Subsurface investigations also indicated the likely presence of a small streamlet or bay inlet in the southern portion of the project site that appears to have been historically filled to level this portion of the site for later uses. The fill material appears to be from the redeposited shell midden. A small area of an older intact midden was found near the southeast corner of the project site to the west of the Brick Kiln building; this midden lies mainly below the existing water table.

Prehistoric artifacts and tribal cultural resources recovered from the project site included obsidian projectile points, charmstones, fragments of mortars and pestles, and bird and mammal bones. Extensive testing and

investigation of recovered artifacts suggests that the area was occupied for a period of up to 800 years about 1,900 to 2,300 years ago, ending about 1,500 years ago. The “fishtail” charmstones found at the site help to identify the period when the site was probably inhabited. According to Holman & Associates (2000), “the presence of several Native American burials, a number of seed grinding implements, and dense layers of dietary refuse support the conclusion that the site was occupied by family units for much of the year.” The prehistoric inhabitants are estimated to have been members of the Coast Miwok culture, possibly from the Huimen tribelet who are known to have lived on Richardson Bay and Corte Madera Creek. Coast Miwok inhabitants followed a subsistence cycle geared towards pursuit of seasonally available resources like acorns, salmon, shellfish, and migratory birds, similar to resources that would have been available on the project site and in nearby wetlands at the Bay shore. The project site also probably provided year-round sources of food such as deer and other game. The inhabitants likely traded with other tribes to the north, based on the number of obsidian tools found at the site. Today, many Coast Miwok people still live in their ancestral territory in Marin County and continue to engage in traditional cultural practices. The Federated Indians of Graton Rancheria (FIGR) are a federally recognized tribe consisting of both Coast Miwok and Southern Pomo (whose ancestral tribal territory is in northern Sonoma County). FIGR, established in 1992, provides members with economic and educational opportunities, and seeks to preserve their traditional heritage. The District has initiated consultations with FIGR in accordance with AB 52.

Holman & Associates (2000) concluded that although a significant portion of the prehistoric and historic archaeological deposits (also considered tribal cultural resources) were excavated to mitigate the impacts caused by the construction and subsequent dismantling of the wastewater treatment plant formerly on the site, intact archaeological deposits and concentrations of redeposited materials are still present on the project site. Specifically, the southern portion of the site is an area with known prehistoric Native American and historic archaeological deposits (also considered tribal cultural resources), including undisturbed remnants of midden. The archaeological consultant has suggested that these prehistoric deposits may be eligible for the California Register of Historic Places as an historical resource (Holman & Associates 2000).

Near the end of the Spanish/Mexican Period (1776 to 1846) in about 1840, the area extending from Point San Quentin, east of the project site, to Ross Valley west of the project site, was used for cattle raising and timber harvesting. In 1852, the State Legislature chose the San Quentin peninsula for a permanent state prison facility. The area north and west of San Quentin State Prison, east of the project site, was used for brick making beginning in the 1850s. By the late 1860s, the Remillard Brick Company was operating a brickyard in the vicinity of the project site. In 1889, the Remillards bought 150 acres of land adjacent to their brickyard, which included the project site. Bricks were transported to San Francisco by the company's scow schooners from a wharf at nearby Larkspur Landing. In 1891, the Remillards constructed the county's first Hoffman kiln. This building, the Remillard Brick Kiln, still stands adjacent to the southern and eastern boundary of the project site. It is designated California Landmark Number 917 and is listed on the National Register of Historic Places (Lee 1977). The interior of the kiln has been converted to a restaurant, and the kiln incorporated into a contemporary building used for offices. Tubb Lake, northeast of the project site, was probably also created in the 1890s as a water supply for employees who lived at the site and for brick-making activities. The Remillard brickyard included support structures including a cookhouse, 16 cabins for workers, stables, a blacksmith shop, vegetable gardens, and an orchard. The Remillard Brick Company ceased operations in 1915.

It is likely that some of the buildings at the Remillard Brick Company, including beehive kilns and cabins, were on the project site (Lee 1977). None of those buildings remain on the project site. They were probably demolished after 1945 for the construction of industrial structures (related to producing shingles and wood fencing materials) and the wastewater treatment plant. However, brick layers, decomposing brick layers, and a brick-lined well were encountered during subsurface investigations on the project site prior to demolition of the wastewater treatment plant. These historic remains suggest that there could have been a kiln on the project site.

In the late 1940s, the von der Werth Redwood Products business was established on the southern portion of the project site, producing shake shingles in a small mill. The von der Werths changed to producing wood fencing materials during the early 1950s, and remained on the site until the early 1960s. None of the von der Werth structures remain on the project site.

The wastewater treatment plant was constructed in the late 1940s on the remainder of the project site. The treatment plant was expanded in the 1960s and again in the 1970s. It was closed in 1985 when the Central Marin Sanitation Agency constructed a new wastewater treatment plant on the north side of Point San Quentin. The treatment plant facilities on the project site were demolished in 1999 and 2000, except for the Sanitary District No. 1 buildings previously described that currently exist on the site.

Analysis as to whether or not project activities would:

- a. Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5, 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).

Impact Analysis:

The project would not demolish any structures, and there are no historic resources on the site; therefore, no direct significant environmental impact would result from the proposed project.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Cause a substantial adverse change in the significance of an archeological resource pursuant to 15064.5 or a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.⁸

Impact Analysis:

There are known prehistoric and historic archaeological materials and tribal cultural resources in the southern portion of the project site. The site, designated CA-MRN-255/H, is partly on the project site, with the remainder located on the adjacent Remillard Brick Kiln property to the southeast. Holman & Associates (2000) recommended consultation with a qualified archaeologist prior to conducting any earth moving construction activities.

Effective July 1, 2015, AB 52 requires 1) a lead agency to provide notice to any California Native American tribes that have requested notice of projects proposed by the lead agency, and 2) if a tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe. AB 52 creates a new category of resources, i.e., tribal cultural resources. Because a significant effect on a Tribal Cultural Resource is considered a significant impact on the environment under CEQA, consultation is required to develop appropriate avoidance, impact minimization, and mitigation measures. Pursuant to AB 52, the District sent a letter to the FIGR notifying them of the proposed project and FIGR responded, requesting consultation. A meeting was held on April 4, 2017, to discuss the project and appropriate mitigation measures to protect tribal resources; FIGR recommended that a Treatment Plan be established prior to initiation of excavation activities (see Mitigation Measure Cul1).

The current project proposes excavation of contaminated soils and debris/fill material within an approximately 2-acre area (Attachment B, Figure 2) and backfilling of the excavated areas. The activities are

⁸ Including those listed in (a) or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of 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.

within portions of the project site that have been determined by archaeologists to have limited or no likelihood of subsurface archaeological artifacts (Holman & Associates 2000) or tribal cultural resources, and are all at least 50 ft from the area where site CA-MRN-255/H extends onto the site. The remainder areas with known prehistoric Native American (i.e., tribal cultural resources) and historic archaeological deposits are not within the footprint of the excavation.

Since the remedial activities would occur in project areas determined by archaeologists to have limited or no likelihood of subsurface archaeological artifacts, the proposed project is not expected to disturb these subsurface prehistoric/historic archaeological deposits and tribal cultural resources. The remedial activities in the proposed project are not expected to disturb subsurface prehistoric/historic archaeological deposits or tribal cultural resources because prior studies have shown limited or no likelihood of occurrence of subsurface archaeological artifacts, prehistoric Native American remains, and historic archaeological deposits within the proposed excavation area.

Remedy implementation includes procedures designed to avoid any disturbance of the resources and protect the cultural and natural context of the resources. Any area of sensitive cultural or tribal cultural resources will be fenced off and not subject to vehicle traffic or any disturbance, and site personnel will be trained to avoid those areas and also to recognize sensitive cultural and tribal cultural resources. The District will coordinate with the FIGR prior to and throughout the project execution. An experienced archaeologist, which will be identified in coordinate with the FIGR, will conduct "spot" (i.e., periodic) monitoring of excavations throughout the project, focusing on excavation activities around the perimeter at the interface of fill and native material. More frequent monitoring will occur when closer to the area where important archaeological resources may occur (see Mitigation Measure Cul2).

If the excavation is extended such that there is a potential to disturb the redeposited Native American shell midden located in the southern portion of the project site or the historic archaeological artifacts from the brick-making uses on the site in the late 1800s, it would be considered a significant impact on archaeological and tribal cultural resources. Any excavation within 25 ft of the area where important archaeological or tribal cultural resources may occur would also be carried out in consultation with a qualified archaeologist, as described in Mitigation Measure Cul1, below. In the event of discovery of previously undocumented archaeological resources, the project would implement these measures in conformity with Larkspur Municipal Code Section 15.42.030 (c) which governs discovery of archaeological resources. With implementation of Mitigation Measure Cul1 and Cul2 (as well as Cul4), impacts to Native American or historic archaeological resources due to subsurface excavation would be less than significant.

Mitigation Measure Cul1. The District will continue to consult with the FIGR prior to initiation of the remedial activities to identify the need for and procedures for the use of tribal monitors, and the appropriate treatment of Native American cultural materials and human remains identified during project implementation, in the event FIGR is identified by the Native American Heritage Commission as the Most Likely Descendant (MLD). A Treatment Plan will be established in consultation with FIGR prior to initiation of excavation activities and a qualified project archaeologist will be selected in consultation with FIGR.

Mitigation Measure Cul2. The following steps will be implemented during excavation activities:

- An experienced archaeologist, selected in consultation with the FIGR, will conduct monitoring in accordance with the established Treatment Plan, which will include "spot" (i.e., periodic) monitoring of excavations throughout the project focusing on excavation activities around the perimeter at the interface of fill and native material. More frequent monitoring will occur when closer to the area where important archaeological resources may occur. The District will coordinate with the FIGR prior to and throughout the project execution.
- If the excavation occurs within 25 ft of an area where important archaeological resources may be present, an experienced archaeologist will be present for continuous monitoring of removal of soils, including observation of soils in their stratigraphic layers as they are removed. The archaeological monitor will be permitted to take appropriate samples as warranted.

- The archaeologist will be authorized to stop or redirect project activity until an evaluation of the presence and integrity of any identified resource can be made. The procedures will follow the established Treatment Plan.
- A final report will be prepared describing methods used, results and findings of the archaeological monitoring, and the mitigation program. Copies of the final report will be provided to the District, the City of Larkspur, and the California Archaeological Site Survey Northwest Information Center.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact Analysis:

The Plan area is underlain by Quaternary (1.8 million years before present to present) alluvium and Mesozoic era (251 million to 66 million years before present) Franciscan Complex deposits and bedrock outcrops (Witter et al. 2006). Some of these deposits have the potential to contain paleontological resources (fossils). With implementation of Mitigation Measure Cul2, impacts to paleontological resources due to subsurface excavation would be less than significant. As mentioned in 5b, site personnel will be trained to recognize sensitive cultural and tribal cultural resources.

Mitigation Measure Cul3. If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 ft will be redirected and a qualified paleontologist will be contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel will not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and trace fossil evidence of past life such as tracks.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- d. Disturb any human remains, including those interred outside of formal cemeteries.

Impact Analysis:

See 5b. The remains of three partial Native American burials, at depths to about 6 ft, were found on the project site. With implementation of Mitigation Measure Cul4, impacts to any human remains due to subsurface excavation would be less than significant.

Mitigation Measure Cul4. If human remains are encountered during excavation activities, work at that location will stop and the Marin County Coroner will be notified (as required by California Health and Safety Code Section 7050.5). In the event that the human remains are believed to be those of a Native American, the established Treatment Plan will be followed in consultation with the archaeologist (as required by California Public Resources Code Section 5097.98). The Treatment Plan is expected to include removal of the remains with scientific recording and study, and timely return of the remains to the MLD for final reinterment.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

References Used:

1. Holman & Associates. 2000. Archaeological Investigations at CA-MRN-255/H Larkspur, Marin County, California. Prepared for Sanitary District No. 1. November.
2. Lee, R. 1977. National Register of Historic Places Inventory Nomination Form for Remillard Brick Kiln. April 18. <https://npgallery.nps.gov/pdfhost/docs/NRHP/Text/78000704.pdf>. Accessed March 12, 2017.
3. Witter, R.C., K.L. Knudsen, J.M. Sowers, C.M. Wentworth, R.D. Koehler, and C.E. Randolph. 2006. Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California. U.S. Geological Survey Open-File Report 2006-1037. <https://pubs.usgs.gov/of/2006/1037/>. Accessed March 12, 2017.

6. Geology and Soils

Project Activities Likely to Create an Impact:

- Excavating of contaminated soil and fill/debris
- Loading of contaminated soil and fill/debris onto dump trucks
- Transporting, onsite stockpiling, and handling of imported backfill materials
- Site grading and revegetating activities.

Description of Baseline Environmental Conditions:

The project site is at the mouth of a small, northeast-trending valley located at the eastern end of the City of Larkspur in the Central Coast Ranges geomorphic province, which is characterized by northwest-southeast trending valleys and ridges. The regional bedrock geology underlying most of this terrain consists of folded, faulted, sheared, and altered sedimentary, igneous, and metamorphic rock of the Jurassic-Cretaceous age Franciscan Complex. Most of the site is a nearly level area, sloping gently to the south as a result of grading after demolition of the wastewater treatment plant. Flanking the level area to the northwest, north, and northeast are hillslopes that have been steepened as a result of quarrying operations prior to 1948. The slopes are generally inclined 1:1 (horizontal to vertical), or 45 degrees, with a portion of the slope to the northwest inclined at a steeper 50 degrees. The slope east of the site continues to the east above Tubb Lake. The upper portion of this slope is natural, and contains several natural drainage swales. The embankment retaining Tubb Lake is situated beyond the north boundary of the site. The embankment was constructed about 100 years ago. North of the site, above the northwest, north, and northeast sides of Tubb Lake, are steep cut slopes. As with the project site slopes, these slopes behind Tubb Lake were also steepened as a result of the pre-1948 quarrying operations. The soil removal and filling activities will take place on the portion of the site that is nearly level area.

The site is located in the seismically active San Francisco Bay Area region. The City of Larkspur is not included on Table 4 Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010 of Special Publication 42, Fault-Rupture Hazard Zones in California, indicating that the site property is not located within an Earthquake Fault Zone. No active faults were identified onsite or in the project vicinity by the Principal Faults Zoned Under Alquist-Priolo Earthquake Fault Zoning Act 1974-2007 issued by the California Division of Mines and Geology in 2007 (Bryant and Hart 2007). Therefore, there would be no

project impacts related to rupture of a known earthquake fault as delineated by the State Geologist or other substantial evidence of a known fault.

Although there are no active faults onsite, the proposed project site is located near several active faults, and is in an area subject to strong ground shaking from earthquakes along the active San Andreas and Hayward faults. The *Larkspur General Plan* (City of Larkspur 1990) identifies the project site and surrounding areas as a high seismic hazard area. Therefore, there is a possibility that the site may experience ground shaking from periodic minor earthquakes and possibly a major earthquake. Secondary effects of ground shaking can cause various types of soil movements, such as landslides, settlement, and liquefaction. Based on the relatively dense nature of the soils of the project site and the underlying geology, the potential for liquefaction or seismically induced failure on the site is considered low (Treadwell & Rollo 2000).

The topography of the project site and its immediate vicinity has been altered from its natural state due to previous quarrying operations, and currently contains many slopes of various inclinations and types. Landslides, the presence of undocumented fill, and colluvium have been mapped within the slopes above the project site; for instance, several relatively small landslide deposits have been mapped in swales upslope of the project site. No features indicative of deep-seated landslide movements have been noted on the site nor immediately upslope of the site. A total of 12 geologic hazard areas were identified in the *2005 Geotechnical Investigation Proposed Development 2000 Larkspur Landing Circle, Larkspur California* (Treadwell & Rollo 2005). The soil removal and filling activities will take place outside of these identified geologic hazard areas.

Analysis as to whether or not project activities would:

- a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
 - ii) Strong seismic ground shaking?
 - iii) Seismic-related ground failure, including liquefaction?

Impact Analysis:

Although there are no active faults onsite, the proposed project site is located near several active faults and is in an area subject to strong ground shaking from earthquakes along the active San Andreas and Hayward faults. The *Larkspur General Plan* identifies the project site and surrounding areas as a high seismic hazard area. Therefore, there is a possibility that the site may experience ground shaking from periodic minor earthquakes and possibly a major earthquake.

The potential for seismically induced landslides in the slopes above the project site is a concern. Although there are no identified deep-seated slide areas on or above the project site, there is a potential for seismically induced landslides in the slopes above the project site as the small landslide deposits located upslope of the site could provide a source for materials that could shake loose and fall on the project site below. Therefore, the major potential effects of the proposed project on the geologic environment relate to instability of new cut and fill slopes, the potential for seismically induced landslides, and the attraction of additional population to a potentially hazardous area.

The soil removal activities will involve excavation. The contractor will comply with the excavation requirements of 29 CFR 1926.651 and 1926.652 or comparable Occupational Safety and Health Administration–approved state plan requirements, which include safety practices and procedures and use of protective systems such as benching, sloping, shoring, and shielding. With the applicable regulations being followed, there is a less-than- significant impact for risk of loss, injury, or death.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

b. Result in substantial soil erosion or the loss of topsoil.

Impact Analysis:

The natural soils of the site have been substantially altered by previous use of the site including construction of the Tubb Lake embankment sometime prior to 1899; quarrying prior to 1948; and grading and placement of fill for the creation of the former Sanitary District No. 1 Treatment Plant in 1948. Further modification occurred when the Treatment Plant was demolished and the site graded in 1998. The remaining native soil is on the slopes at the northern and eastern edges of the property. The soil removal activities would require removal of much of the remaining topsoil during the project. However, this removal would not be significant as these areas total approximately 2 acres in extent; the soils are not uniquely valuable; and the areas will be backfilled to match existing grade, graded to drain, and revegetated. Some shallow soils may be excavated, stockpiled, and determined to be suitable for reuse as clean backfill.

The soil removal and filling activities would not create any new drainage patterns on the undeveloped portions of the property (i.e., no new pathways for soil erosion). A Construction SWPPP is required for the project since the work will be greater than 1 acre in size. Proper implementation of the Construction SWPPP would prevent significant soil erosion from occurring and the loss of topsoil would be considered a less-than-significant impact.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

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

Impact Analysis:

The ground shaking accompanying major earthquakes has primary and secondary effects. Primary effects of ground shaking are those that directly affect buildings and other structures. Secondary effects of ground shaking can cause various types of soil movements, such as landslides, settlement, and liquefaction. Liquefaction is a response to severe ground shaking that can occur in loose, uniform soils that are saturated with water.

The soils on the project site and in the watershed above the site are made up of artificial fill and surface soils, underlain by bedrock. Surface soils consist of deposits of colluvium (loose deposits of soil, organic material, and weathered bedrock fragments accumulated by gravity on hillsides) and other soils. The colluvium deposits are located primarily in the swales on the slopes east and north of the site and above Tubb Lake. Colluvial soils may also be buried under the fill. The non-colluvial soils consist of stiff to hard gravelly and sandy clays. In the southern portion of the site, a layer of Bay Mud up to 18 ft thick is found between surface soils and the sandstone bedrock. Bay Mud is a highly compressible, weak silty clay/clayey silt present beneath and along most of the shoreline of San Francisco Bay. The type of soil most susceptible to liquefaction is loose, clean, saturated, uniformly graded, fine-grained sand. The soil below groundwater at

the site is dense or contains significant clay fractions. The site does not contain the types of loose, saturated soils typically associated with liquefaction (Treadwell & Rollo 2000). Based on the relatively dense nature of the soils and the project site and the underlying geology, the potential for liquefaction or seismically induced failure on the site is considered low, and therefore, this would be considered a less-than-significant impact.

Fill is the most prevalent soil type at the site. Fill was placed for the construction of the Tubb Lake embankment, when the former Sanitary District No. 1 Treatment Plant was constructed on the site of the quarry, and again when the Treatment Plant was demolished in 1998. Fill thickness on the site ranges from a few inches at the edges of the flat, central portion of the site, to 14 ft where cavities resulting from demolition of below-grade structures and pits were backfilled. The planned remedial activities will remove much of this fill material. Excavated areas will be backfilled with clean, imported fill material or shallow soils excavated, stockpiled, and determined to be suitable for reuse and compacted to engineering specifications. The site will be regraded to approximately pre-excavation conditions (i.e., graded to drain properly). Site soils will not become unstable as a result of the project and therefore the potential for lateral spreading or subsidence is considered low and a less-than-significant impact.

Several landslide deposits have been mapped in swales upslope of the site (around Tubb Lake). The soil removal and filling activities are outside these identified landslide areas and therefore landslides are considered to have no impact on the project.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

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

Impact Analysis:

Soils now present on the project site are not expansive. As fill is imported to the site, it is possible that expansive soil materials could be deposited on the site. The geotechnical engineer would specify that non-expansive imported fill be used to raise the site (Treadwell & Rollo 2005). Thus, impacts caused by expansive soils would not occur.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water.

Impact Analysis:

Disposal systems will not be required at the site. Septic tanks or alternative waste water disposal systems would not be required or employed. Therefore, the soil removal and filling activities would have no impacts related to the suitability of soils for septic tanks or alternative waste water disposal systems.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

References Used:

1. Bryant, W.A., and E.W. Hart. 2007. Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps. Special Publication 42. Interim Revision 2007. California Department of Conservations, Sacramento, CA.
2. City of Larkspur. 1990. *Larkspur General Plan 1990-2010*. City of Larkspur, CA. December.
3. Treadwell & Rollo. 2000. Preliminary Geotechnical Investigation, Proposed Hotel and Office Buildings, 2000 Larkspur Landing Circle, Larkspur, California. Treadwell & Rollo, Inc. March 30.
4. Treadwell & Rollo. 2005. Geotechnical Investigation Proposed Development, 2000 Larkspur Landing Circle, Larkspur, California. Treadwell & Rollo, Inc.

7. Greenhouse Gas Emissions

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of contaminated soil and debris using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal of excavated soil and debris to appropriate facility and importation of clean soil.
- Site restoration, including backfill of all excavated areas with imported clean soil.

Description of Baseline Environmental Conditions:

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The process of heat being trapped in the atmosphere is similar to the effect greenhouses have in raising the internal temperature, hence the name “greenhouse gas.” Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the Earth’s temperature; however, emissions from human activities—such as fossil fuel–based electricity production and the use of motor vehicles—have elevated the concentration of GHGs in the atmosphere. GHGs are not monitored in the same manner as air quality pollutants, so there are no background data to characterize the baseline conditions of a given area in terms of GHG levels.

GHGs from fossil fuel combustion include carbon dioxide (CO₂), methane, and nitrous oxide. CO₂ is the most common reference gas for climate change. To account for warming potential, GHGs are often quantified and reported as CO₂ equivalents (CO₂e), based on their warming potential relative to CO₂.

Recent legislation, including Assembly Bill 32, the Cap-and-Trade Program, and Executive Order S-1-07, has been enacted to slow the increase in GHG emissions. Executive Order S-1-07 would be the most applicable to this project due to the use of fossil-fueled heavy construction equipment; this order establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020.

The American Society for Testing and Materials (ASTM) Standard E2893-16, Standard Guide for Greener Cleanups, is a guide that describes “a process for evaluating and implementing activities to reduce the environmental footprint of a cleanup project” (ASTM 2016). ASTM identifies sets of BMPs that can be

utilized “when deemed appropriate” to reduce the environmental footprint of a project. The ASTM guidance is not a statutory requirement but was considered herein. Specifically, the guidance was reviewed to identify BMPs that could be employed to reduce the environmental footprint of the remediation project. The design of the remediation project already includes several element consistent with BMPs outlined in ASTM E2893-16, Table X3.1 (Greener Cleanup BMP Table), including:

- Reuse of uncontaminated soils onsite
- Minimizing idling times to minimize emissions, GHGs, and fuel consumption
- Utilizing dust control measures to minimize the release of pollutants
- The use of stormwater BMPs to protect water quality
- Avoidance of impacts to wetlands and waters.

Other measures that could be employed, where feasible, to reduce the footprint of the project include:

- Using biodiesel and/or biodegradable hydraulic fluids
- Using electric, hybrid, ethanol, or compressed natural gas vehicles
- Using local staff (including subcontractors) when possible to minimize transportation impacts
- Encouraging the use of public transportation and ride-sharing for site staff
- Designating collection points for compostable materials and routine recycling of single-use items
- Minimizing hauling distance, by using backfill material from a local source and/or material that would be considered “waste” from another project
- Restricting onsite traffic to confined corridors to minimize soil compaction and land disturbance during site activities
- Selecting waste disposal and recycling facilities closest to the site to minimize transportation impacts
- Employing a closed-loop graywater washing system for decontamination of trucks and other equipment
- Using biodegradable seed matting, or erosion control fabrics
- Restoring the site using a suitable native hydroseed mix to preserve or improve biodiversity and related ecosystem services; for grass, use no- or low-mowing species.
- Replacing grassed swales/channels and other types of vegetated areas to enhance gradual infiltration and evapotranspiration and prevent soil and sediment runoff.

The contractor bid and specifications will list the above measures and encourage the contractor to employ these BMPs, where feasible. Regardless of whether these additional measures are implemented by the contractor selected by the District, GHG impacts of the project will be less than significant.

Analysis as to whether or not project activities would:

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact Analysis:

Proposed project activities would result in direct GHG emissions from fuel combustion in construction equipment and vehicles. The number of project-related vehicles would be relatively small and the project duration would be relatively short. GHG emissions were calculated using the CalEEMod emissions estimator model, as described above in Section 3, Air Quality. The estimated GHG emissions are shown in the table below.

The Guidelines (BAAQMD 2010a, 2017) present an emissions threshold for GHGs from a land use operations project of 1,100 CO_{2e} MT/year, but do not report an adopted threshold of significance for construction-related GHG emissions. However, based on the small scale of this construction project, the District (the lead agency) estimated that the maximum annual emissions (337 MT/year) that could be generated during construction are approximately one-third of the BAAQMD's threshold of significance for operations-related GHG emissions of 1,100 CO_{2e} MT/year. As a comparison, the Sacramento Metropolitan Air Quality Management District (SMAQMD 2015) threshold of significance for construction-related GHG emissions is 1,100 MT/year. The Marin Climate and Energy Partnership web site (<http://www.marinclimate.org/>) was reviewed, but also contains no thresholds of significance. The estimated GHG emissions for the City of Larkspur in 2014 were over 71,000 MT with approximately half of this attributed to transportation, comprising approximately 1 percent of the transportation emissions for the City of Larkspur. This level of increase is less than significant.

Total Project Emissions

Pollutant	Maximum Annual Emissions ^a (MT/year)	Threshold ^b (MT/year)	Above Threshold?
CO _{2e}	337	1,100	No

^a Mitigated and unmitigated values are the same.

^b Based on the threshold of significance for operations-related GHG emissions (BAAQMD 2010a)

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Impact Analysis:

The proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Measures contained in the 2010 CAP (BAAQMD 2010b) to reduce overall emissions from construction equipment, already accounted for in the regional planning emissions budget, would also control GHG emissions. Thus, the project would not conflict with GHG plans, policies, or regulations, and impacts would be less than significant.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

References Used:

1. ASTM. 2016. Standard Guide for Greener Cleanups. E2893-16. American Society for Testing and Materials International, West Conshohocken, PA. January.

2. BAAQMD. 2010a. California Environmental Quality Act Air Quality Guidelines. May 2010. http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/draft_baaqmd_ceqa_guidelines_may_2010_final.pdf?la=en. Accessed February 2016. Bay Area Air Quality Management District, San Francisco, CA.
3. BAAQMD. 2010b. *Bay Area 2010 Clean Air Plan, Final Clean Air Plan*, Volume I, adopted September 15, 2010. Bay Area Air Quality Management District, San Francisco, CA.
4. BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. Updated May 9. http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed May 31, 2017. Bay Area Air Quality Management District, San Francisco, CA.
5. SMAQMD. 2015. Thresholds of Significance Table. <http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable5-2015.pdf>. Accessed May 31, 2017. Sacramento Metropolitan Air Quality Management District.

8. Hazards and Hazardous Materials

Project Activities Likely to Create an Impact:

- Excavation and stockpiling of contaminated soil and debris using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, or grader)
- Loading the contaminated media onto dump trucks
- Offsite transport and disposal of excavated soil and debris to appropriate facility based on waste characterization.

Description of Baseline Environmental Conditions:

The material proposed for removal is PCB-impacted soil within the remedial target area.

Analysis as to whether or not project activities would:

- a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials.

Impact Analysis:

The project would involve the excavation/removal, stockpiling, and offsite and onsite disposal of soil and debris containing PCBs. At concentrations in excess of regulatory criteria, some of these materials would constitute hazardous/TSCA waste. Removed materials would be managed as a potentially hazardous waste until characterization is completed. If waste characterization results indicate that excavated soil is hazardous/TSCA waste, these materials would be managed and disposed of as hazardous/TSCA waste as described below.

As would be detailed in the site-specific HASP developed for the project, applicable site controls would be implemented to protect worker health during these activities. Site controls would also be consistent with dust control measures, BMPs, hazardous waste and TSCA regulations, and other applicable regulations and permits. Prior to loading for transport, the excavated/removed materials would be pre-characterized (chemically analyzed) and direct loaded onto trucks, or stockpiled and chemically analyzed. Excavated/removed materials would be covered while stored on trucks or stockpiled, and air monitoring would be performed to detect possible offsite impacts and implement measures to reduce dust levels to within BAAQMD (2012) limits. Excavated/removed materials would be transported by truck to a permitted landfill for disposal. All trucks would be covered and would follow a designated route to limit impacts to residents and businesses.

Should excavated/removed materials from the site meet the classification of hazardous/TSCA wastes, they would be transported under appropriate waste manifests by registered hazardous waste haulers holding a

currently valid registration issued by DTSC and meeting federal requirements imposed by the Department of Transportation (DOT) and EPA under the Resource Conservation and Recovery Act (RCRA). Haulers are also subject to California hazardous waste law requirements pertaining to hauling of hazardous wastes (Health and Safety Code §25100 et seq. and §25163 et seq.; 22 CCR §66263.10 et seq.; 13 CCR §1160 et seq.; California Vehicle Code §12804 et seq. and §31300 et seq.), which are implemented and enforced by DTSC, as well as the California Highway Patrol, Department of Motor Vehicles, local sheriff, and police agencies who have general responsibilities for the transportation of hazardous waste on state and local roadways. Thus, the project would not create a significant hazard through the use, release, or disposal of hazardous materials.

Hazardous materials include fuels and lubricants that would be brought on the site periodically following standard construction or drilling practices. Transportation of fuel and lubricants would conform to state and federal requirements for hazardous materials transportation. Site activities would be performed consistent with a site-specific HASP.

The standard measures for the management of potentially contaminated waste, and adherence to site controls and plans reduce the potential for hazard to the public or to the environment resulting from the project to less than significant.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact Analysis:

Project activities would be conducted in accordance with the site-specific HASP and activity hazard analysis developed for the project. The HASP would provide an Emergency Contingency Plan. With the correct implementation of the Emergency Contingency Plan, the potential for hazardous releases should be minimized. All trucks would be registered hazardous waste haulers licensed by the State of California and trained to deal with emergencies. Potentially hazardous conditions that could occur during cleanup activities include fire, fuel spills, hydraulic fluid leaks, and accidents and incidents commonly associated with construction-related activities. The potential hazards for these conditions or situations would be mitigated through proper maintenance and operation of systems, machinery, and vehicles; proper storage of fuels; marking of underground utilities; and enforcement of safe work practices and other safety provisions as specified in the HASP.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

Impact Analysis:

There is no existing or proposed school within one-quarter mile of the project site. The Children's Cottage Cooperative preschool is located approximately 100 ft north of the project site.

As discussed in the Air Quality section (Section 3d), the average concentration of hazardous material (PCBs) used to estimate the dust concentrations indicates no adverse risks to offsite receptors. Although the worst case scenario for dust is estimated to exceed the action level, this level of risk is unlikely because it is estimated based upon the fact that maximum concentration is from a single location and the remainder of the locations are much lower in concentration. The exposures would occur over 8 months and not 30 years, and the BMPs to control dust are likely to result insignificantly lower dust concentrations. The project is not expected to expose sensitive receptors such as children in the preschool to substantial pollutant concentrations for the following reasons:

- Only minor amounts of soil excavations would occur.
- A limited number of construction vehicles or equipment would operate at any time.
- The project activities are short term and would last approximately 8 months.
- Combustion emissions from vehicles and equipment are below the significance thresholds from the Guidelines (BAAQMD 2010).
- Standard construction BMPs, such as using a water truck and covering of soil stockpiles, would be used for dust suppression.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment.

Impact Analysis:

The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

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

Impact Analysis:

The project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The project is not within the vicinity of a private airstrip. Thus, the project would not result in a safety hazard for people residing or working in the project area.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.

Impact Analysis:

See 8f above.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact Analysis:

The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Project activities and movement related to such activities would be conducted in a manner that would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; therefore, there will be no impacts with an adopted emergency response plan or emergency evacuation plan.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact Analysis:

No development is planned for this project and, therefore, no impacts are expected.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

References Used:

1. BAAQMD. 2010. California Environmental Quality Act Air Quality Guidelines. May 2010. http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/draft_baaqmd_ceqa_guidelines_may_2010_final.pdf?la=en. Accessed February 2016. Bay Area Air Quality Management District, San Francisco, CA.
2. BAAQMD. 2012. Final California Environmental Quality Act Air Quality Guidelines. Updated May 2012. http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/baaqmd-ceqa-guidelines_final_may-2012.pdf?la=en. Accessed February 2016. Bay Area Air Quality Management District, San Francisco, CA.

9. Hydrology and Water Quality

Project Activities Likely to Create an Impact:

It is possible that soil removal and backfilling activities could result in degradation of water quality in San Francisco Bay by reducing the quality of stormwater runoff. The work does not propose any discharges to receiving waters other than discharges associated with stormwater runoff.

Construction and grading within the project site would require temporary disturbance of surface soils and removal of vegetative cover. During the construction period, grading and excavation activities would result in exposure of soil to runoff, potentially causing erosion and entrainment of sediment in the runoff. Soil stockpiles and excavated areas on the project site would be exposed to runoff and, if not managed properly, the runoff could cause erosion and increased sedimentation in downstream culverts and the Bay. The accumulation of sediment could result in blockage of flows, potentially resulting in increased localized ponding or flooding.

The potential for chemical releases is present at most construction sites. Once released, substances such as fuels and lubricants could be transported to nearby surface waters in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters.

Description of Baseline Environmental Conditions:

The project site drains through a single discharge pipe under East Sir Francis Drake Boulevard directly into the Bay, a water body that is listed as impaired by the State Water Resources Control Board (SWRCB). A Construction SWPPP including BMPs would be required to address the potential for discharge of sediment and other pollutants during the project. The exact locations, extent, nature, and details of the BMPs will be decided upon in consultation with, and subject to review and approval of, the City of Larkspur prior to the issuance of grading permits. BMPs will include but not be limited to:

- Project sponsor will require that daily watering for dust control, soil stabilization controls, and perimeter silt fences be employed. Erosion control practices must be specified for the fill placement and compaction phase of the project. End-of-pipe sediment control measures (e.g., basins and traps) will be used only as secondary measures. If, following the placement and compaction of fill, hydroseeding is selected as the primary soil stabilization method, then all areas will be seeded following completion of backfilling activities and irrigated as necessary to ensure adequate root development.

- Project sponsor will require that site drainage will be prevented from contacting stored construction materials, equipment, and maintenance supplies (i.e., fuels, lubricants, etc.), as well as waste construction materials and supplies, through the use of elevated platforms or berms or other diversion structures. Supply and waste storage areas will be located at least 50 ft from drainage facilities and watercourses and will not be located in any area prone to flooding.
- Project sponsor will require that material and waste storage areas be protected from rainfall.
- Site supervisors will conduct weekly onsite meetings to discuss pollution prevention. All construction personnel will be required to attend such meetings.
- Project sponsor will require that vehicle and equipment wash-down facilities be employed prior to exiting the site. These facilities will be accessible and functional during both dry and wet conditions.

Analysis as to whether or not project activities would:

- a. Violate any water quality standards or waste discharge requirements.

Impact Analysis:

The project site drains through a single discharge pipe under East Sir Francis Drake Boulevard directly into the Bay, a water body that is listed as impaired by the SWRCB. The SWRCB has designated San Francisco Bay as having water quality impaired for constituents including PCBs, which are the primary chemical of concern at this site (SWRCB 2010). If there is a chance that the work could increase the amount of PCBs discharged to the Bay, then a significant cumulative impact would be expected to occur.

The soil removal activities at the project site are being conducted to address existing PCB impacts in fill material, which overall reduce the potential for loading to the Bay. Implementation of hazardous materials handling measures in addition to the Construction SWPPP will prevent discharges of PCBs into site runoff. Hazardous materials handling measures will include the following:

- Before construction, the selected contractor will develop a site operations plan that identifies construction equipment staging and support areas, site access, exclusion areas, excavation areas, soil stockpile areas, truck lanes, parking areas, and site office trailers. Support areas and stockpiles would be placed in a zone not subject to excavation, while excavation and backfilling would be within the exclusion zones.
- Excavated material will be wetted before loading to reduce the potential for dust generation during loading and transportation to the designated landfill.
- Transport trucks will be inspected after filling and before leaving the site to ensure that the impacted soil/material is securely covered and that the tires and haul trucks are free of accumulated contaminated soil. The wheels and tires of all haul trucks and other construction equipment leaving the site will be decontaminated by brushing, power washing, or wheel washes as necessary to prevent offsite transport on tires (see additional details on decontamination in Attachment D).
- If stockpiling of material is necessary, stockpiles will be stored within a bermed area on liner material, protected from stormwater run-on/runoff, and covered to prevent windblown dust. Any accumulated water would be collected from a low point within the bermed area and pumped into a portable storage tank. The contained water would be tested and treated, if necessary, before disposal (see additional details on disposal operations and transportation in Attachment D). Watering to control dust should not result in ponded water or runoff. Water sweepers will vacuum up excess water to avoid runoff-related impacts.
- The potential for offsite vapor or dust migration, as well as worker exposure, is minimized by measures that include excavating and loading techniques, maintaining soil moisture, covering all loads, effective haul truck decontamination, and onsite speed limits. Prevention of all dust generation is not possible, but the contractor will be required to minimize dust emissions during the work day to the maximum extent possible and to comply with all BAAQMD rules and regulations.

- Excavation and loading work will be modified or suspended during high wind conditions that render control measures to be ineffective in preventing offsite migration of visible dust

In summary, the proposed project is not expected to affect the loading of any of the pollutants that are currently causing impairment in the Bay. However, without appropriate handling measures, the soil removal and filling could result in unacceptable discharges of sediment. Implementation of a Construction SWPPP, dust control measures, and other BMPs would reduce this potentially significant impact to a less-than-significant level.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Impact Analysis:

The project site is not located in an identified groundwater basin (RWQCB 2015). The project does not propose the use of groundwater and therefore no long-term extraction of groundwater at the project site is expected. There may be short-term dewatering of shallow groundwater associated with soil removal and filling activities. Short-term dewatering activities would not be expected to have any significant long-term effect on groundwater resources because any pumping activities would be of limited duration. Therefore, the project would have a less-than-significant impact.

Incidental water management may be required depending on precipitation and the depth of soil and debris removal operations. Water coming into contact with debris and contaminated soil may be extracted to the extent necessary to perform the work, and then containerized (in tanks or drums) for chemical analysis prior to discharge. Water will be managed in accordance with applicable regulations, health and safety requirements, and the applicable procedures described in this application. Dewatering water containing chemical concentrations exceeding applicable discharge limits may require pre-treatment to reduce contaminant concentration to comply with discharge limits. If pre-treatment is infeasible, then dewatering water will be collected into DOT-approved containers for offsite transport and disposal at an appropriate facility (see additional details on disposal operations in Attachment D).

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.

Impact Analysis:

No perennial streams or rivers cross the site. All storm-related surface runoff from the site is currently conveyed to the Bay through a 36-in. pipe that crosses under East Sir Francis Drake Boulevard. The central

portion of the site (including the District's parking lot) drains to a 12-in. underground pipe that discharges into the 36-in. pipe at the southern property boundary. The rest of the site drains toward a grassy swale along the site's southeast property boundary. This grassy swale eventually discharges to the 36-in. pipe under East Sir Francis Drake Boulevard. The site also receives through-flow from the watershed upstream. Approximately 20 acres of open space, which includes Tubb Lake, is located upslope and drains through the grassy swale along the southeast property boundary of the site.

The site will be regraded to approximately pre-excavation conditions (graded to drain properly). Suitable erosion controls, such as hydroseeding with native plant species, will be provided during site restoration. The project will not alter the existing topography by grading, and therefore drainage patterns would not be changed relative to existing conditions.

The soil removal and filling activities could result in increased erosion and deposition of sediment in the Bay. However, implementation of a Construction SWPPP would be expected to adequately mitigate the potential for increased erosion and siltation to a less-than-significant level.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site.

Impact Analysis:

The project site drains directly to the Bay, and therefore downstream flooding is controlled by the elevation of the water in the Bay. No significant changes in runoff rates and volumes from the project site are anticipated since the site is to be regraded to approximately pre-excavation conditions. Any minor changes to drainages would not be expected to result in any measurable change in the elevation of the water in the Bay.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Impact Analysis:

It is not expected that the soil removal and filling activities would increase discharge and thus it is not expected that the activities could exceed the capacity of the 36-in. culvert under East Sir Francis Drake Boulevard. There is no impact-related runoff capacity for this project, and a less-than-significant level of impact related to additional sources of polluted runoff with proper implementation of a Construction SWPPP.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

f. Otherwise substantially degrade water quality.

Impact Analysis:

See 9a.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

Impact Analysis:

According to the most recent Federal Emergency Management Agency (FEMA) mapping, the site is not located within the 100-year flood hazard zone (FEMA 1984). In addition, there will be no placement of housing or other structures on the project site for this remediation project.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Impact Analysis:

See 9g.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Impact Analysis:

The only dam or levee failure that would be expected to affect the proposed project would be the dam at Tubb Lake. Tubb Lake is located less than 100 ft upslope from the project site's northeastern boundary. Reportedly, the lake was constructed about 100 years ago to provide water for a brick refractory formerly located nearby (Miller Pacific Engineering Group 1997). The reservoir embankment is about 20 to 25 ft higher than the downstream toe. The reservoir covers an area of about 0.5 acre, with a maximum depth of about 13 ft. When full, it is estimated that the reservoir holds about 3.8 acre-ft of water.

If the dam were to fail, it could flood the area downslope, potentially endangering construction workers and damaging equipment. The stability of the dam was investigated in the late 1990s and found to be in need of upgrades (Miller Pacific Engineering Group 1997, 1999). Since that time, the City of Larkspur has completed all the recommended upgrades and is implementing a maintenance plan that requires regular inspections and maintenance of the dam and its associated components. The project does not include any features that would impact the dam, therefore, there is no impact to the dam from the project.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- j. Inundation by seiche, tsunami or mudflow.

Impact Analysis:

Seiching is the formation of standing waves in a water body due to wave formation and subsequent reflections from the ends. These waves may be incited by earthquake motions (similar to the motions caused by shaking a glass of water), impulsive winds over the surface, or due to wave motions entering the basin. It is possible that a seiche could develop in Tubb Lake, upslope from the project site. If a wave generated by a seiche were to overtop the dam at Tubb Lake, some flooding of the project site could occur. However, any seiche that is likely to occur in Tubb Lake would be relatively small because the lake is small (approximately 100 ft by 200 ft). The largest amplitude seiches are usually found in shallow bodies of water of large horizontal extent. A review of the literature revealed no accounts of historic damaging seiches occurring in lakes the size of Tubb Lake. Most notable seiches occur in large water bodies (e.g., the Great Lakes). Potential damage to the proposed project from a seiche is considered a less-than-significant impact.

The estimated run-up from a tsunami with a 100-year return period (i.e., expected to occur once every 100 years, on average) is 4.9 ft above mean sea level at the Bay I Corte Madera Creek estuary shoreline near the project site (Garcia and Houston 1975). The elevation of the project site is approximately 10 ft above mean sea level or more. Given the surface elevation of the project site, inundation from a 100-year tsunami would not be expected.

The main central portion of the project site is relatively level and no impacts from mud flows would be expected in this area. However, mud flows or other types of slope failures could occur in the uplands surrounding the site to the north and east. Potential slope instability is further discussed in the Geology and Soils (Section 6).

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

References Used:

1. FEMA. 1984. Flood Insurance Rate Map (FIRM), City of Larkspur, California, Community Panel Number 065040 0001 B. Federal Emergency Management Agency. March 15.
2. Garcia, A., and J. Houston. 1975. Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, Technical Report H-75-17. November.
3. Miller Pacific Engineering Group. 1997. Preliminary Geotechnical Evaluation, Tubb Lake, Larkspur, California. Miller Pacific Engineering Group. July 8.
4. Miller Pacific Engineering Group. 1999. Supplemental Geotechnical Evaluation, Tubb Lake Reservoir Embankment, Larkspur, California. Miller Pacific Engineering Group. August 26.
5. SWRCB. 2010. CWA Section 303(d) List of Water Quality Limited Segments. Final Approval by USEPA: October 2011. State Water Resources Control Board.
6. RWQCB. 2015. Water Quality Control Plan (Basin Plan), March 20. Regional Water Quality Control Board, San Francisco Bay Region (Region 2).

10. Land Use and Planning

Project Activities Likely to Create an Impact:

None. No land use change are proposed.

Description of Baseline Environmental Conditions:

The site is owned by the Sanitary District No. 1 of Marin County. The District's wastewater treatment plant, maintenance facility and administrative offices operated on the site from the 1940s to the mid-1980s. When the Central Marin Sanitation Agency wastewater treatment plant came on line in 1985, the treatment plant on the project site was closed. Since 1985, the District has maintained administrative offices in temporary trailers and a corporation yard for maintaining equipment, storing supplies, overnight parking of District vehicles, and fueling vehicles. In 1998, the City of Larkspur approved the Sanitary District's application to demolish the treatment plant and backfill the project site. Demolition of the treatment plant and grading of the site was completed in 1999–2000. As discussed above in Hazards and Hazardous Material, the fill imported to the site to complete the removal of the former wastewater treatment plant was found to be contaminated with hazardous wastes, which are proposed to be removed prior to new construction (See Hazards and Hazardous Material subsection for a detailed discussion of contaminated fill on the project site).

Currently, the site is actively used as an operations base for the District, and includes two modular buildings and an area for sewer maintenance and operations equipment, vehicles, and materials staging. The southernmost approximate 2 acres is the primary area of active use. The site is completely fenced off from the public with a cyclone chain-link fence of approximately 8 ft in height, and has a locked swing-gate at the main entrance.

Analysis as to whether or not project activities would:

- a. Physically divide an established community.

Impact Analysis:

No land use change are proposed. The soil removal and backfilling activities will have no impact related to dividing established communities.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

Impact Analysis:

No land use change are proposed. The soil removal and backfilling activities would not conflict with any applicable land use plan, policy, or regulation.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Conflict with any applicable habitat conservation plan or natural community conservation plan.

Impact Analysis:

The project site is not within any habitat conservation plan or natural community conservation plan. Therefore, the project would have no impact on any biological resources plan. There are no agricultural resources or operations on or adjacent to the project site; therefore, the project would not have a significant impact on agricultural resources.

Overall, the soil removal and backfilling activities would not result in significant environmental impacts related to land use and planning.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

11. Mineral Resources

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The California Division of Mines and Geology (CDMG) has classified urbanizing lands within the North San Francisco Bay Production-Consumption Region according to presence or absence of sand, gravel, or stone deposits that are suitable as sources of aggregate. The project site is located in an area that has been classified as Mineral Resource Zone 1 (MRZ-1). Areas that are classified MRZ-1 are "areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence" (CDMG 1987).

Analysis as to whether or not project activities would:

- a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

Impact Analysis:

Since no mineral resources of value to the region are known to exist within the project site and soil removal and backfilling activities would take place in areas of already disturbed soil, the project would have no effect on the availability of known mineral resources.

Although the site was a clay quarry for brick-making in the 1800s and early 1900s, the use is no longer applicable because much of the clay has been removed from the site and brick-making would no longer be feasible on the site. The project would not include quarrying, mining, dredging, or extraction of locally important mineral resources onsite, nor would it deplete any nonrenewable natural resource. Therefore, the project would have no impact related to mineral resources.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

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

Impact Analysis:

See 11a.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

Reference Used:

1. CDMG. 1987. Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area: North San Francisco Bay Production Consumption Region, California Department of Conservation, Division of Mines and Geology.

12. Noise

Project Activities Likely to Create an Impact:

The project could potentially cause temporary noise impacts associated with construction during soil removal and backfilling activities primarily related to project-generated traffic noise and operational noise from onsite construction equipment.

Description of Baseline Environmental Conditions:

The project site is located near East Sir Francis Drake Boulevard, a major through roadway in Larkspur; therefore, it is in an area with relatively high ambient noise levels caused mainly by vehicular traffic. As is typical in most urban environments, vehicular traffic, particularly on East Sir Francis Drake Boulevard, dominates the noise environment in the project area. The area of the project site in the vicinity of East Sir Francis Drake Boulevard is exposed to a Day-Night Average Sound Level (DNL)⁹ of approximately 70 dBA¹⁰; this DNL is reduced to approximately 65 dBA or less for the northernmost portions of the site, located farther away from East Sir Francis Drake Boulevard¹¹.

Analysis as to whether or not project activities would result in:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Impact Analysis:

Chapter 9.54 in the Larkspur Municipal Code, also known as the City Noise Ordinance, contains noise control regulations for various noise sources. According to code, for exterior noise in residential areas, the noise limit is based on the noise level not to be exceeded for more than 30 minutes per hour. For residential uses, the limit is 50 dBA between 7 a.m. and 10 p.m., and 40 dBA between 10 p.m. and 7 a.m., measured at the residential location. For commercial uses, including hotels, the limit is 60 dBA anytime. The noise level limit is adjusted down by 5 dBA when applied to repetitive or impulsive noises. The Noise Ordinance also contains adjustments for the duration for the noise. For short duration noise (e.g., noise that occurs less than 1 minute per hour), the allowable levels in a residential zone would increase to 65 dBA during the day or 55 dBA at night. In commercial zones, the level increases to 75 dBA. Section 9.54.060 has exemptions to

⁹ DNL = Day-Night Average Sound Level; it is a 24-hour average noise level with a 10-dBA penalty added for sound during the nighttime hours of 10:00 p.m. - 7:00 a.m. to account for the increased sensitivity to nighttime noises. dBA = The A-weighted sound level in decibels. A-weighting is a method of filtering a measured sound so that it corresponds with loudness as perceived by humans.

¹⁰ A November 2001 noise analysis prepared by Charles M. Salter Associates (as cited by Turnstone Consulting 2004a) estimated an existing DNL of 70 dBA at 50 ft from the centerline of East Sir Francis Drake Boulevard. The noise analysis in the Initial Study prepared by EDAW for the Monahan Pacific Project in City of Larkspur, prepared May 22, 2002 (as cited by Turnstone Consulting 2004a), measured a CNEL (Community Noise Equivalent Level) of 70-72 dBA at 50 ft from the centerline of East Sir Francis Drake Boulevard roadway. Figure 7-8: 1995 Noise Exposure Contours in the Larkspur General Plan Community Health and Safety Element shows the day/night average noise level for the project area in the 1990s to be 60-65 dBA.

¹¹ The northernmost portions of the site are well over 100 ft away from the centerline of East Sir Francis Drake Boulevard. Noise levels typically attenuate at a rate of 6 dBA per doubling of distance. Therefore, if the DNL was 70 dBA at 50 ft from a noise source, it would decrease to 64 dBA at 200 ft from the same noise source.

the noise level limits for construction activities. According to the ordinance, construction is allowed Monday through Friday from 7 a.m. to 6 p.m., and Saturday, Sunday, and legal holidays from 9 a.m. to 5 p.m. All powered construction equipment must be equipped with intake and exhaust mufflers. Pavement breakers and jackhammers also must be equipped with acoustical attenuating shields or shrouds recommended by the manufacturer.

Project soil removal and backfilling activities would cause temporary, intermittent noise effects in the immediate project vicinity for the duration of construction. Noise would also be generated because of the use of excavators, backhoes, and other construction equipment, and increased haul truck traffic on area roadways and the transport of heavy materials and equipment to and from the project site, for the duration of the work.

EPA found that the noisiest equipment at construction sites, including earthmovers, material handlers and portable generators, generate typical maximum noise levels of 88–91 dBA at 50 ft. The City Noise Ordinance exempts construction activities from noise controls, except for impact tools like jackhammers, but limits the hours during which construction can occur to avoid disturbance during evening and nighttime hours. In general, meeting the requirements of the Noise Ordinance would reduce the noise impacts to less-than-significant levels, given the temporary nature of this noise source and proper management measures. The earthwork contracts will include a requirement that the earthwork contractor comply with the City Noise Ordinance limitations on hours of construction. Work hours will be Monday through Friday 7 a.m. to 6 p.m. and Saturday 9 a.m. to 5 p.m. (as necessary), although no grading will occur on Saturdays unless authorized by the City of Larkspur. The contractor will also comply with requirements to install intake and exhaust mufflers on construction equipment and install acoustical shields or shrouds if pavement breakers or jackhammers are utilized.

The Children’s Cottage Cooperative Preschool is located near the northwestern entrance to the site on Lincoln Village Circle. This daycare center would be exposed to intermittent noise from earthwork traffic leaving and entering the project site and from the soil removal and filling activities taking place on the project site. Noise would primarily affect the daycare center during work at the northwest corner of the site, near the intersection of Larkspur Landing Circle East and Lincoln Village Circle. Maximum noise levels are estimated to reach up to 80 dBA at the school during the noisiest work activities. This would be considered less than significant due to its short duration.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels.

Impact Analysis:

See 12a.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project.

Impact Analysis:

The construction project is estimated to last approximately 8 months. Therefore, no permanent increase in ambient noise levels is expected.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Analysis:

See 12a and 12c.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

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

Impact Analysis:

The project site is not within any airport land use plan or within 2 miles of any airport or airstrip. Therefore, the project would not impact, or be impacted by, an airport land use.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

Impact Analysis:

See 12e.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

References Used:

1. Charles M. Salter Associates. 2001. Noise Analysis. November. (as cited in Turnstone Consulting 2004a)
2. EDAW. 2002. Initial Study for the Monahan Pacific Project in City of Larkspur. May 22. (as cited in Turnstone Consulting 2004a)
3. Turnstone Consulting. 2004a. Expanded Initial Study, 2000 Larkspur Landing Circle. October 20.

13. Population and Housing

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

Currently, there are no residential units on the project site. No displacement of housing or people would occur as a result of the soil removal and filling activities. Therefore, the project would have no impacts on existing housing in the City.

Analysis as to whether or not project activities would:

- a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

Impact Analysis:

The soil removal and backfilling activities will not induce population growth.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Impact Analysis:

The soil removal and backfilling activities will not displace existing housing.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Impact Analysis:

The soil removal and backfilling activities will not displace existing housing.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

14. Public Services

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The project is in an area that is currently served by fire, police, and paramedic services; schools; and other public facilities. It is not anticipated that the soil removal and filling activities would increase the number of police and fire protection-related calls received from the area or the level of regulatory oversight that must be provided as a result of the work. Overall, the project would not create additional demand for public services in Larkspur. Therefore, the project would have no impact on public services.

Analysis as to whether or not project activities would:

- a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government 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 following public services:
 - Fire protection

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- Police protection

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- Schools

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- Parks

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- Other public facilities

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

15. Recreation

Project Activities Likely to Create an Impact:

None.

Description of Baseline Environmental Conditions:

The northern portion of the shoreline (facing the project site) along Corte Madera Creek is designated Shoreline/Marsh Conservation area on the Larkspur General Plan Land Use Map. It is an approximately one-half mile long open space of varying widths (about 60 to 145 ft) between East Sir Francis Drake Boulevard and Corte Madera Creek. There are also three parks in the vicinity of the project site: 1) Miwok Park, 2) Remillard Park, and 3) a neighborhood park adjacent to the nearby daycare center on Larkspur

Landing Circle East. Miwok Park and Remillard Park are two of the three parks in the City of Larkspur that include protected marshes and natural areas (City of Larkspur 1990).

The approximately 8-acre Miwok Park is a landlocked steeply sloped park to the immediate northeast of the project site. Its principal feature is Tubb Lake, a small artificial freshwater lake surrounded by willow trees at the top of a knoll.¹² The City of Larkspur Mini Parks Master Plan recognizes Miwok Park as a passive and undeveloped recreational facility.

The approximately 7-acre Remillard Park is south of East Sir Francis Drake Boulevard and east of the project site, opposite the former Handlogger's property and the Monahan Pacific property. It includes parkland, a freshwater marsh, a wildlife sanctuary, and a narrow strip of beach along the edge of the Corte Madera Creek estuary. This park offers picnicking and fishing facilities.

An approximately 2-acre neighborhood park is located north of Lincoln Village Circle to the rear of the project site and west of the Children's Cottage Cooperative Preschool. The neighborhood park includes a parking lot accessible from Lincoln Village Circle. This park offers picnicking facilities and wide grassy areas for sitting or active recreation.

Analysis as to whether or not project activities would:

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

Impact Analysis:

The soil removal and backfilling activities are not expected to increase the use of existing neighborhood and regional parks or other recreational facilities.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Impact Analysis:

The soil removal and backfilling activities do not involve recreational facilities or require construction or expansion of recreational facilities.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

¹² Tubb Lake is a remnant of the brick-making operation that existed on the project site and some of the surrounding property in the late 19th and early 20th centuries.

Reference Used:

1. City of Larkspur. 1990. *Larkspur General Plan 1990-2010*. City of Larkspur, CA. December.

16. Transportation and Traffic

Project Activities Likely to Create an Impact:

The project could impact transportation and traffic by the following activities:

- Empty dump trucks accessing the site to load contaminated soil and debris excavated as part of the project
- Loaded dump trucks transporting excavated soil and debris from the project site to appropriate disposal facilities
- Loaded dump trucks accessing the site to deliver imported materials to backfill excavations
- Empty dump trucks leaving the site after delivering backfill materials
- Transport of project-related construction equipment, etc.

Total 25-ton single trailer dump truck trips on average is expected to be 40 trips per day. It is unlikely that more than 40 trucks per day will enter and leave the site on most days; the actual number of trucks per day may be lower due to constraints at the site and the landfills. The use of oversized or excessive load vehicles is not anticipated for this project. If such vehicles are required, the contractor will be instructed to comply with the Caltrans Transportation Permit process.

Description of Baseline Environmental Conditions:

The project site is bound on the south by East Sir Francis Drake Boulevard and on the west by the eastern portion of Larkspur Landing Circle, a semicircular roadway. Sir Francis Drake Boulevard is the key east-west through road in Marin County, stretching from Point Reyes on the west to the San Quentin Peninsula on the east. U.S. 101 divides Sir Francis Drake Boulevard, with the boulevard called Sir Francis Drake Boulevard and East Sir Francis Drake Boulevard on the two sides of the highway. The intersection of Sir Francis Drake Boulevard and U.S. 101 is analyzed as two intersections: 1) Sir Francis Drake Boulevard and the U.S. 101 northbound entrance ramps, and 2) the boulevard intersecting with U.S. 101's southbound entrance ramps. East of U.S. 101, East Sir Francis Drake Boulevard intersects with the semicircular Larkspur Landing Circle two times: Larkspur Landing Circle West and Larkspur Landing Circle East. East Sir Francis Drake Boulevard then passes the proposed project site, and thereafter becomes a two-lane road with left turn pockets. It intersects with the west gate entrance to San Quentin State Prison and with Andersen Drive in San Rafael, before connecting to I-580 and the Richmond-San Rafael Bridge.

Dowling Associates, Inc. (2003) prepared a traffic impact analysis and parking report for Campus Cornerstone Larkspur, L.L.C. that analyzed 10 intersections along Sir Francis Drake Boulevard between Bon Air Road and Anderson Drive. Out of the 10 intersections analyzed, those relevant to the proposed project include the Sir Francis Drake Boulevard intersections with the northbound and southbound entrance ramps to U.S. 101, and the intersections of East Sir Francis Drake Boulevard with Larkspur Landing Circle West, Larkspur Landing Circle East, Andersen Drive, and the west gate entrance to San Quentin State Prison. The intersections likely impacted by the proposed project were found to operate at an acceptable Level of Service D (LOS D) or better during both the peak a.m. and p.m. hours under existing conditions.

These levels of service are based on traffic counts taken in 2001 and 2003 and do not reflect impacts of construction at the U.S. 101 interchange or the improvements to the Richmond-San Rafael Bridge. The City of Larkspur (2014) Station Area Plan environmental impact report (EIR) provided an evaluation of traffic volumes in 2011 that showed either similar volumes or even reduced volumes as in 2006. Total daily trips (eastbound and westbound) in the vicinity of the project exceeded 2,000 in the a.m. and p.m. The Transportation Authority of Marin (TAM) recently contracted with Parisi Transportation Consulting

(Harrington 2016, pers. comm.) to conduct additional traffic counts in the Larkspur Landing area. The recent counts were conducted in October 2016 and showed an increase in traffic in the vicinity of the project site. At the eastern intersection of Larkspur Landing Circle and Sir Francis Drake Boulevard, which is the intersection that trucks will be required to utilize, counts increased by 55 to 67 percent during the morning peak traffic hours and 68 to 100 percent during the peak afternoon traffic hours, with over 3,000 trips in the morning and over 4,000 in the afternoon.

The project site is across East Sir Francis Drake Boulevard from the mouth of Corte Madera Creek and opposite the Golden Gate Transit's Larkspur Ferry Terminal. The ferry provides service to and from the San Francisco Ferry Building and to and from AT&T Park on days when baseball games are scheduled. Golden Gate Transit also provides bus service within Marin County and includes stops at the Larkspur Ferry and San Quentin State Prison, stops near the proposed project site on East Sir Francis Drake Boulevard, in between Larkspur Landing Circle East and Larkspur Landing Circle West. The Marin Airporter bus service is located at 300 Larkspur Landing Circle, across Sir Francis Drake Boulevard from the Larkspur Landing Ferry Terminal. While the Marin Airporter does not provide commuter service to San Francisco, it provides service to San Francisco International Airport.

Analysis as to whether or not project activities would:

- a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Impact Analysis:

The proposed project is expected to add, on average, 40 round trips per day (80 total trips) for truck traffic. It is unlikely that more than 40 trucks per day will enter and leave the site on most days; the actual number of trucks per day may be lower due to constraints at the site and the landfills. The Larkspur General Plan Circulation Element, Policy d (City of Larkspur 1990), establishes LOS D as the minimum acceptable LOS for signalized intersections, including the nearby East Sir Francis Drake Boulevard and U.S. 101 ramp intersections, and LOS C as the minimum acceptable LOS for unsignalized intersections. The LOS data and counts were obtained from the following studies: *Traffic Impact Assessment and Parking Report for 2000 Larkspur Landing Circle* prepared by Dowling Associates, Inc. (2003) for Campus Cornerstone Larkspur, L.L.C.; and *SMART Station Area Plan Environmental Impact Report* prepared by the City of Larkspur (2014) using data from 2011. The counts from the two studies were similar. Newer information on LOS and counts was obtained from Parisi Transportation Consulting (Harrington 2016, pers. comm.)

The project would result in three primary sources of trips over the course of the work including 1) initial staging of equipment and materials resulting in 3 to 5 trips of heavy trucks and trailers bringing in construction equipment; 2) up to 40 (but more likely 30 or less) 25-ton single trailer dump-truck trips, half of them off-hauling material and half bringing backfill to the site, split over the course of approximately 6 months for the removal of excavated material and the delivery of clean backfill material; and 3) from 2 to 8 daily peak-hour trips to and from the site for workers and crew for up to 6 months. An additional 32–48 vehicle trips per day are unlikely to impact LOS. Most of the truck trips will be off-peak as dump trucks will mobilize to the site early in the morning hours and the last trucks will need to leave the site in the mid-afternoon to arrive at the designated landfill(s) before their closing time.

The estimated 80 truck trips (40 round trips) to the site each day is likely a conservative estimate, as the backfill delivery may coincide with the off-hauling to some degree (i.e., a truck delivering backfill would be loaded with soil for off-haul to a landfill, thereby combining two trips into one). Only a small number of workers will be required for this project (likely in the range of 6–10), so the trips due to worker travel are minimal and likely off-peak (workers arriving by 6:30 a.m. and leaving at 6 p.m. or later).

As noted above, the City of Larkspur (2014) estimates, the bidirectional Average Daily Trips (ADT) on Sir Francis Drake Boulevard as over 2,000 trips in the a.m. and p.m. and more recent data shows up to 4,000 trips. The few additional daily truck trips, which would add less than 1 percent additional daily trips, would

not deteriorate traffic conditions on Sir Francis Drake Boulevard. Impacts to U.S. 101 and I-580 would be even lower. As such, the temporary increase in trips over a short period (6 months) would have a negligible temporary impact on the level of service and impacts would be considered less than significant.

Ultimately, truck routes will be developed by the contractor, who will be required to provide a Transportation Plan (this provision, which is a routinely required contractor submittal as well as a requirement for the grading and hauling permit, is included in Attachment D). It is not anticipated that trucks will utilize U.S. 101 as all of the landfills that can accept the type of waste from this project are located in the East Bay or Central Valley. Thus, trucks are most likely to take Sir Francis Drake Boulevard to and from the east to I-580. The source of the backfill material is not known at this time (to be determined by the contractor), but may also originate in the East Bay.

The nature of the project is such that dump trucks off-hauling materials will not be traveling to and from the site in the late afternoon (landfills typically will not take dump trucks past mid-afternoon); therefore, no travel by dump trucks is anticipated between 4:30 and 7:00 p.m. However, off-haul trucks will need to enter the site between 6:30 and 8:30 a.m. A few trucks can stage onsite prior to 6:30 a.m., but the site does not have the capacity for 20 trucks to stage. A small number of trucks (likely a maximum of 10) will need to travel to the site between 6:30 and 8:30 a.m.; this small volume of trucks will have no material impact on the traffic on U.S. 101. Backfill materials are likely to be transported to the site in off-peak hours (after trucks off-hauling material leave the site) and are also unlikely to arrive onsite after 4:30 p.m.

As stated above, the contractor will be required to prepare a Transportation Plan. One goal of the plan will be to minimize impacts to local traffic to the extent feasible. However, as found in the Initial Study, the number of truck trips (anticipated to be approximately 40 round trips, or 80 trips per day, largely during non-peak hours) will have a less than significant impact. Throughput on the site will be limited by the speed of the excavation and backfilling activities and limited space for staging onsite. The number of trucks per hour on Sir Francis Drake Boulevard is expected to be 10 or less, compared to over 1,000 vehicles estimated over an hour during peak traffic hours in the 2006 study. This increase in traffic is considered less than significant.

The project is not expected to have any impacts on mass transit (no impacts to ferry or bus routes) or bicycle or pedestrian paths (no impact to bicycle or pedestrian pathways).

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Impact Analysis:

The project site is located within the jurisdiction of the City of Larkspur. As discussed in 16a above, the proposed project is not expected to exceed the acceptable traffic levels of service or create increased congestion of the nearby streets, highways, or intersections, and would therefore have less than significant impacts.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Impact Analysis:

The project activities would not require air travel or transport. In addition, no structures would be constructed or altered in such a way that air traffic patterns would be affected.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact Analysis:

The project would not result in road closures and would introduce a negligible number of trips over an approximately 6-month period. No elements of the project design would introduce hazards to the road system.

Transportation of fuel and lubricants would conform to state and federal requirements for hazardous materials transportation. Site activities would be performed consistent with a site-specific HASP. Excavated/removed materials would be transported by truck to a permitted landfill for disposal. All trucks would be covered and would follow a designated route to limit impacts to residents and businesses.

Should materials excavated or removed from the site be classified as hazardous wastes, they would be transported under hazardous waste manifests by registered hazardous waste haulers holding a currently valid registration issued by DTSC and meeting federal DOT and RCRA requirements. Haulers are also subject to California hazardous waste law requirements pertaining to hauling of hazardous wastes (Health and Safety Code §25100 et seq. and §25163 et seq.; 22 CCR §66263.10 et seq.; 13 CCR §1160 et seq.; California Vehicle Code §12804 et seq. and §31300 et seq.), which are implemented and enforced by DTSC, as well as the California Highway Patrol, Department of Motor Vehicles, local sheriff, and police agencies who have general responsibilities for the transportation of hazardous waste on state and local roadways. Compliance with all standards and regulations would reduce the probability of an accident substantially and render impacts resulting from transportation insignificant.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- e. Result in inadequate emergency access.

Impact Analysis:

Project activities would be performed consistent with a site-specific HASP. The HASP would describe complete procedures and protocols for all emergency situations. District staff would ensure that access to the project site will be maintained and controlled throughout project implementation. In addition, the project does not prescribe activities involving transportation of massive amounts of material and the high frequency of truck trips usually associated with such activities.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Impact Analysis:

The proposed work would not significantly impact existing roadways, bicycle paths, or pedestrian facilities and therefore does not conflict with any related, adopted policies, plans, or programs.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

References Used:

1. City of Larkspur. 1990. *Larkspur General Plan 1990-2010*. City of Larkspur, CA. December.
2. City of Larkspur. 2014. *SMART Station Area Plan Environmental Impact Report*. City of Larkspur, CA.
3. Dowling Associates, Inc. 2003. *Traffic Impact Assessment and Parking Report for 2000 Larkspur Landing Circle*. Dowling Associates, Inc. November 20.
4. Harrington, C. 2016. Personal communication (e-mail to M. Pattanayek at Integral Consulting Inc., on June 7, 2016, regarding traffic counts at Larkspur Landing intersections). Parisi Transportation Consulting.

17. Utilities and Service Systems

Project Activities Likely to Create an Impact:

The soil removal and backfilling activities would not significantly increase the requirement of water or wastewater services for the project site.

Description of Baseline Environmental Conditions:

The project is in an area where water service is provided by the Marin Municipal Water District, sewer facilities are managed by Sanitary District No. 1, and wastewater treatment service is provided at the Central

Marin Wastewater Treatment Plant, and local solid waste disposal is provided by Marin Sanitary Service at the Novato Landfill.

The project site is presently owned by the District. The District operated a wastewater treatment plant on the project site from 1949 until 1985 when the Central Marin Sanitation Agency (CMSA) wastewater treatment plant on Andersen Drive in San Rafael came online. The Sanitary District No. 1 provides collection service to the project site. Wastewater would not be generated by the soil removal and filling activities.

The soil removal and filling activities would not significantly increase the consumption of water on the project site. A temporary increase of water consumption may occur associated with water truck use for dust suppression during soil removal and filling activities.

The project would not require the construction of new public stormwater drainage facilities.

Analysis as to whether or not project activities would:

- a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

Impact Analysis:

Wastewater would not be generated by the soil removal and filling activities. Temporary sanitary facilities (portable toilets) will be deployed for use for the length of the project.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis:

Wastewater would not be generated by the soil removal and filling activities and therefore there would be no impact on the existing wastewater network.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis:

The project would not require the construction of new public stormwater drainage facilities.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

Impact Analysis:

The soil removal and backfilling activities would not significantly increase the consumption of water on the project site. A temporary increase of water consumption may occur associated with water truck use for dust suppression during soil removal and filling activities.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.

Impact Analysis:

Wastewater would not be generated by the soil removal and filling activities and therefore there would be no impact on the existing wastewater network.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

- f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

Impact Analysis:

Samples of the contaminated soil were collected and analyzed to assess the PCB concentration and characterize the material for disposal prior to excavation. The results of the sampling and analysis will be used for waste profiling and to secure waste acceptance from landfills in advance of excavation; these actions will facilitate direct loading of the material into trucks for transportation to the appropriate disposal facilities. Soil with total PCB concentration of less than 50 mg/kg will be disposed at an approved PCB facility; or when disposed pursuant to 40 CFR Part 761.61(a) or (c), a permitted municipal solid waste or non-municipal non-hazardous waste facility; or a RCRA Sec. 3004 or Sec. 3006 permitted hazardous waste landfill. Soil with total PCB concentration of 50 mg/kg or greater will be disposed at a RCRA Sec. 3004 or Sec. 3006 permitted hazardous waste landfill or an approved PCB disposal facility. Since waste profiling and landfill approval will take place before the planned soil removal, there will be no impact associated with permitted capacity.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

g. Comply with federal, state, and local statutes and regulations related to solid waste.

Impact Analysis:

The removed soil will be profiled and properly disposed of at a designated facility following the applicable state and federal regulations.

Conclusion:

- Potentially Significant Impact
- Less Than Significant with Mitigation Incorporated
- Less Than Significant Impact
- No Impact

The Draft Initial Study was submitted for a 30-day public review on April 14, 2017. Comments were received from Caltrans, the City of Larkspur, and the FIGR. The response to public comments are in Attachment H.

REPORT PREPARERS

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Mala Pattanayek, Project Manager

Mandatory Findings of Significance

Based on evidence provided in this Initial Study, Integral makes the following findings:

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

The project would have a positive impact on the environment by reducing potential sources of PCB contamination in soil, which could also reduce potential impacts to surface water and groundwater quality. The short-term disturbance of the project area during the remediation activities would not impact the adjacent habitat. There are no identified special-status species in the project area. Based on the information presented within the Biological Resources section, there would be a less than significant potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. Wetlands and water have been delineated on the site but outside of the excavation footprint; however, the USACE has not yet made a jurisdictional determination. As a mitigation measure to reduce loss of wetland resources, remediation will commence at the site after verification of wetland delineation by the USACE and concurrence from the RWQCB. In addition, remediation will not commence until CWA 401 or 404 permits are obtained, if deemed necessary, and the District will comply with any permit conditions. With implementation of the mitigation measures, impacts to biological resources would be less than significant.

Based on the presented information within the Cultural and Tribal Cultural Resources section, the project would have a less than significant impact on subsurface prehistoric/historic archaeological deposits or tribal resources because prior studies have shown limited or no likelihood of occurrence subsurface archaeological artifacts, prehistoric Native American remains, and historic archaeological deposits within the proposed excavation area. A Treatment Plan will be established prior to initiation of excavation activities in the event that sensitive cultural or tribal cultural resources are encountered during project implementation, and the District will coordinate with the FIGR prior to and during project implementation. As a mitigation measure, any area of sensitive cultural and tribal cultural resources will be fenced off and not subject to vehicle traffic or any disturbance, and site personnel will be trained to avoid those areas and also to recognize sensitive cultural and tribal cultural resources. An experienced archaeologist, approved by the FIGR, will conduct "spot" (i.e., periodic) monitoring of excavations throughout the project, focusing on excavation activities around the perimeter at the interface of fill and native material. More frequent monitoring will occur when closer to the area where important archaeological resources may occur. If any excavation occurs within 25 ft of the area where important archaeological resources may occur, a qualified archaeologist would conduct continuous monitoring. In the event of discovery of previously undocumented archaeological resources, the project would implement measures in conformity with the established Treatment Plan. If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 ft will be redirected and an experienced paleontologist will be consulted for recommendations of the treatment of discovery. If human remains are encountered during excavation activities, work at that location will stop and the Marin County Coroner will be notified. In the event that the human remains are believed to be those of a Native American, the established Treatment Plan will be followed. With implementation of the mitigation measures, impacts to Native American or historic archaeological resources due to subsurface excavation would be less than significant.

- b. The project has does not have impacts that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual 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.

The proposed activities are limited in aerial extent and duration, would result in the construction of no new structures/buildings, and would return the ground surface in outdoor areas to pre-project conditions. Therefore, the cumulative impact from project activities is less than significant.

- c. The project has does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

The potential for offsite contaminant migration, as well as worker exposure, will be minimized by measures that include excavation and loading techniques, maintaining soil moisture, covering all loads, effective haul truck decontamination, and onsite speed limits. As described in the Air Quality section, prevention of all dust generation is not possible, but the contractor will be required to minimize dust emissions during the work day to the maximum extent possible and to comply with all BAAQMD rules and regulations. Combustion emissions from vehicles and equipment used for the project would not exceed the significance thresholds listed from the BAAQMD guidelines.

The average concentration of PCBs used to estimate the dust concentrations indicates no adverse risks to workers and offsite receptors. Although the worst case scenario for dust at the action level of 150 µg/m³ (based on the maximum detected PCB concentration) is estimated to exceed the action level, this level of risk is unlikely because the maximum concentration is from a single location and the remainder of the locations are much lower in concentration, the exposures would occur over 8 months and not 30 years, and the BMPs to control dust are likely to result insignificantly lower dust concentrations. Additionally, the dust concentrations are not expected to be sustained at 150 µg/m³ as a California guideline of 50 µg/m³ is expected to be used as the trigger for implementing additional dust control measures.

When considering this Initial Study, the proposed project would not have a significant adverse effect on human beings, either directly or indirectly.

Determination of Appropriate Environmental Document:

On the basis of this initial evaluation:

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

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

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

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

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

Certification:

Greg Norby, P.E.
General Manager

Date

ATTACHMENT A

ABBREVIATIONS AND ACRONYMS

ATTACHMENT A ABBREVIATIONS AND ACRONYMS

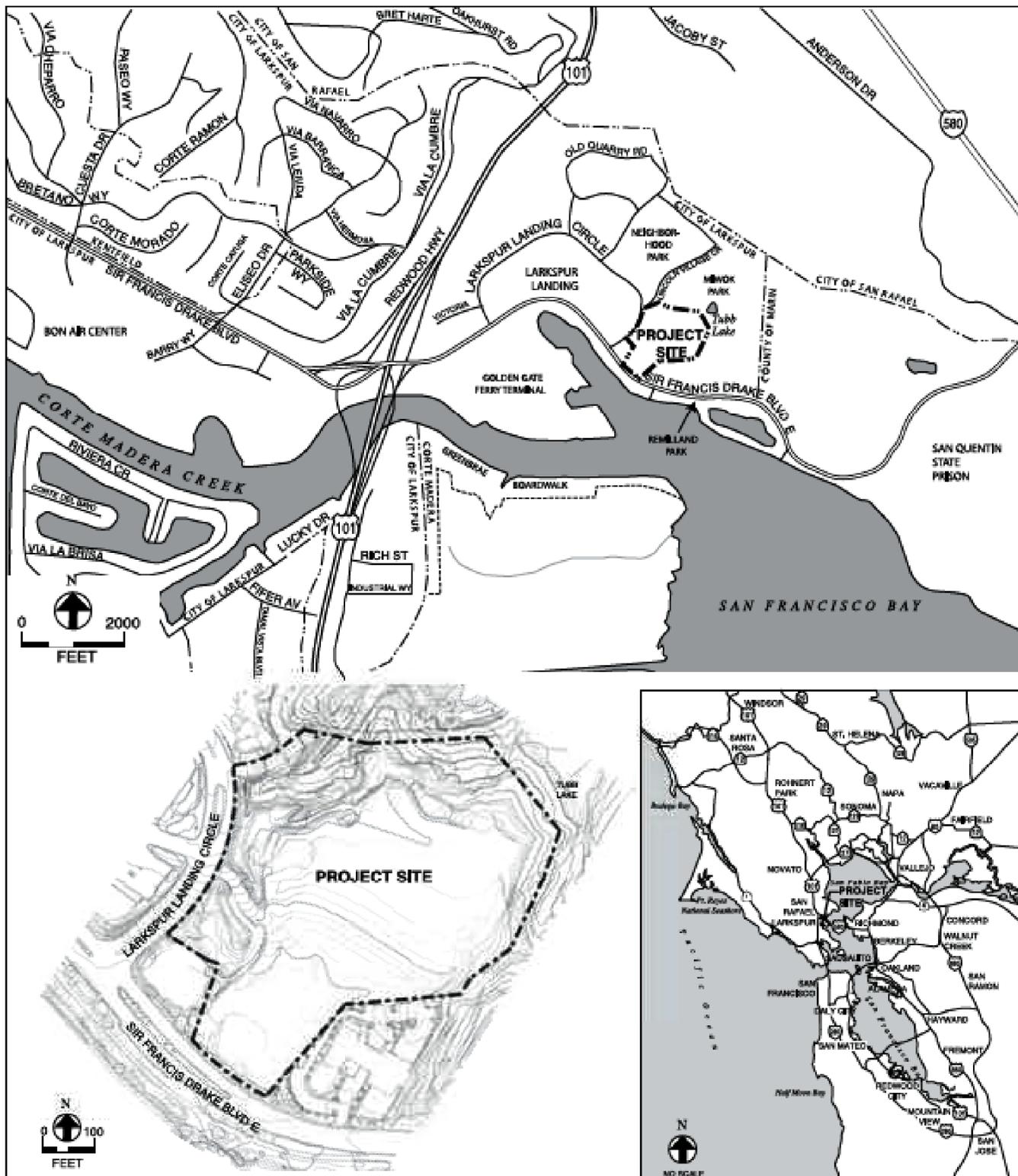
AB 52	Assembly Bill No. 52
ADT	Average Daily Trips
ASTM	American Society for Testing and Materials
BAAQMD	Bay Area Air Quality Management District
bgs	below ground surface
BMP	best management practice
CalEEMod	California Emissions Estimator Model
CAP	Clean Air Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CMSA	Central Marin Sanitation Agency
CNDDDB	California Natural Diversity Database
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
CWA	Clean Water Act
District	Sanitary District No. 1 of Marin County
DNL	Day-Night Average Sound Level
DOT	Department of Transportation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIGR	Federated Indians of Graton Rancheria
GHG	greenhouse gas
HASP	health and safety plan
I-580	Interstate 580
Integral	Integral Consulting Inc.
LOS	Level of Service
LWTP	Larkspur Wastewater Treatment Plant
mg/kg	milligram per kilogram

MLD	Most Likely Descendant
MRZ	Mineral Resource Zone
NOx	oxides of nitrogen
OEHHA	Office of Health Hazard Assessment
OHWM	Ordinary High Water Mark
PCB	polychlorinated biphenyl
PM2.5	particulate matter less than 2.5 microns
PM10	particulate matter less than 10 microns
RBSL	risk-based screening level
RCRA	Resource Conservation and Recovery Act
REL	reference exposure level
ROG	reactive organic gases
RSL	regional screening level
RWQCB	San Francisco Bay Regional Water Quality Control Board
SFBAAB	San Francisco Bay Area Air Basin
SLO County APCD	San Luis Obispo Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAM	Transportation Authority of Marin
TSCA	Toxic Substances Control Act
U.S. 101	U.S. Highway 101
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

ATTACHMENT B

FIGURES

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SOURCE: Turnstone Consulting



Figure 1.
Project Location Map
Environmental Remediation, Former Wastewater
Treatment Plant
2000 Larkspur Landing Circle, Larkspur, CA 94939

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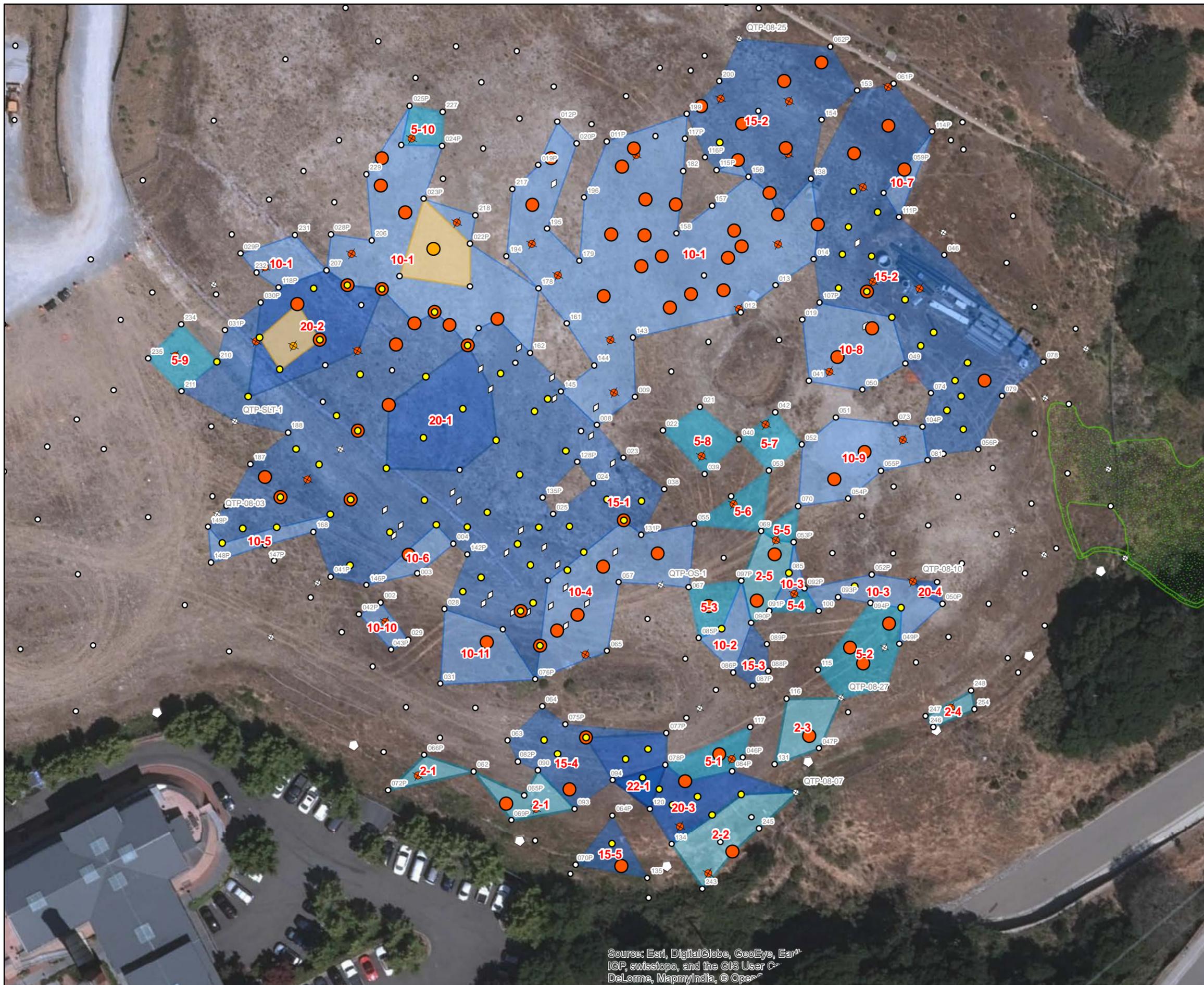
OHWM = ordinary high water mark
 LF = linear feet

Figure 2.
 Expected limits of excavation
 Environmental Remediation, Former Wastewater
 Treatment Plant,
 2000 Larkspur Landing Circle, Larkspur, CA 94939

ATTACHMENT C

EXCERPTS FROM KENNEDY JENKS,
INC. 2017 REPORT

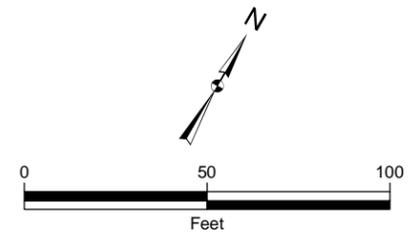
\\fsisgdata\z_drive\Projects\Larkspur\Events\20170116_WP\mxd\Figure 21_ExcCombined.mxd



Legend

- Demolition Backfill Observed
- MaxPCB_mgk**
- Total PCBs Below 0.24 mg/kg (includes detects and non-detects)
- Total PCBs Exceeds 0.24 mg/kg
- Total PCBs Exceeds 50 mg/kg
- ◊ Sidewalk and Swale Surface and Near Surface Sample Locations
- Max_Total**
- ⊕ Total PCBs Below 0.24 mg/kg (includes detects and non-detects)
- ⊕ Total PCBs Exceeds 0.24 mg/kg
- ⊕ Total PCBs Exceeds 50 mg/kg
- ◇ Questa Confirmation Samples - Does Not Exceed 0.24 mg/kg over 15 feet
- ◇ Questa Confirmation Samples - Do Not Exceed 0.24 mg/kg over 15 feet
- Seasonal Wetland
- PCBs Greater Than 50 mg/kg
- Proposed Excavation Limits to Maximum 22 feet
- Proposed Excavation Limits to Maximum 20 feet
- Proposed Excavation Limits to Maximum 15 feet
- Proposed Excavation Limits to Maximum 10 feet
- Proposed Extent of Excavation to Max 5 feet
- Proposed Extent of Excavation to Maximum 2 feet

Notes:
 1. Total PCBs were not detected above 0.24 mg/kg in sidewalk or swale surface and near-surface samples.



Kennedy/Jenks Consultants

Former Larkspur Wastewater Treatment Plant Site
2000 Larkspur Landing Circle, Larkspur, CA

Proposed Excavation Extents

DRAFT

K/J 1565036.01
February 2017

Figure 21

Source: Esri, DigitalGlobe, GeoEye, Earthstar, IGN, swisstopo, and the GIS User Community, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Table 16: Proposed Excavations

Excavation	Depth feet	Area square feet	Volume	
			cubic feet	cubic yards
2-1	2	940	1,880	70
2-2	2	1,290	2,580	96
2-3	2	760	1,520	56
2-4	2	210	420	16
2-5	2	780	1,560	58
5-1	5	590	2,950	109
5-2	5	1,360	6,800	252
5-3	5	500	2,500	93
5-4	5	160	800	30
5-5	5	190	950	35
5-6	5	570	2,850	106
5-7	5	510	2,550	94
5-8	5	700	3,500	130
5-9	5	640	3,200	119
5-10	5	380	1,900	70
10-1	10	19,110	191,100	7,078
10-2	10	530	5,300	196
10-3	10	1,170	11,700	433
10-4	10	3,270	32,700	1,211
10-5	10	480	4,800	178
10-6	10	470	4,700	174
10-7	10	300	3,000	111
10-8	10	1,860	18,600	689
10-9	10	2,060	20,600	763
10-10	10	280	2,800	104
10-11	10	1,300	13,000	481
15-1	15	20,710	310,650	11,506
15-2	15	14,630	219,450	8,128
15-3	15	360	5,400	200
15-4	15	1,640	24,600	911
15-5	15	560	8,400	311
20-1	20	2,660	53,200	1,970
20-2	20	2,740	54,800	2,030
20-3	20	2,260	45,200	1,674
20-4	20	100	2,000	74
22-1	22	290	6,380	236
Total		86,360	1,074,340	39,790

Note:

- (a) Excavation 10-1 is estimated to contain approximately 400 cy of soil to be disposed of as hazardous waste.
- (b) Excavation 20-2 is estimated to contain approximately 30 cy of soil to be disposed of as hazardous waste.

Table 17: ProUCL Summary

Analyte	Number of Samples	Number of Detections	Kaplan-Meier Mean	Mean of Detections	Median of Detections	Maximum Detection	95% UCL			Cleanup Level
							Distribution	Method	95% UCL	
All Remaining Soil Samples Post-Excavation, 0 - 2.2 ft bgs										
PCB 1254	747	11	0.0105	0.0466	0.04	0.12	Normal	95% KM (t) UCL	0.0109	0.24
PCB 1260	750	87	0.0137	0.0415	0.028	0.18	No Discernable Distribution	95% KM (% Bootstrap) UCL	0.0147	0.24
All Remaining Soil Samples Post-Excavation, 0 - 10 ft bgs										
PCB 1254	1469	74	0.0117	0.0533	0.0425	0.22	Gamma	95% Approximate Gamma KM-UCL	0.0123	0.24
PCB 1260	1476	264	0.0171	0.0519	0.033	0.22	No Discernable Distribution	95% KM (% Bootstrap) UCL	0.0183	0.24

Notes

95% UCL = 95 percent upper confidence limit on the mean

ft bgs = feet below ground surface

Concentrations are in milligrams per kilogram.

Statistical calculations were performed using ProUCL version 5.1 (EPA 2015).

The Kaplan-Meier (KM) mean is calculated on the full dataset, adjusting for censoring using a distribution function estimate.

ATTACHMENT D

SITE PREPARATION PLANS

1.1 Health and Safety Plan

The District will require the Contractor to develop and implement health and safety protocols that, at a minimum, conform to the general requirements of OSHA standards for hazardous waste operations (29 CFR 1910.120). The Contractor must take responsibility for all job-site safety issues as required by the general industry safety orders and all laws and regulations.

The Contractor will be required to submit for the District's review prior to the start of construction activities a project-specific *Health and Safety Plan* (HASP) for implementation of the remedial action. Actual, potential, or anticipated hazards to be addressed in the HASP include, but are not limited to:

- Hazardous substances.
- Fall protection.
- Confined spaces.
- Trenches or excavations.
- Lockout/tagout.
- Heat/cold stress.
- Water hazards.
- Respiratory hazards.
- Hearing conservation.

It is anticipated that the Contractor's HASP will include the following:

- The name and contact information of individual(s) who has been designated as the Contractor's Project Manager and Project Health and Safety Representative.
- Requirements for workers who have current 40-hour OSHA 1910.120 training.
- Site controls to be implemented during construction activities to prevent the public from entering the limits of work.
- Identification of potential physical and chemical hazards.
- Requirements for personal protective equipment (PPE).
- An emergency action plan in the event of an accident, or serious unplanned event (e.g., fire, structure collapse, etc.) that requires notifying any response agencies (e.g., fire departments, PG&E, rescue teams, etc.), including emergency telephone numbers and hospital routes.

The Contractor's HASP will reflect a commitment to exercise extreme care when handling or disposing of materials or substances that are identified as hazardous substances.

A copy of the Contractor's HASP will be available within the limits of work at all times and will apply to all personnel working at, or visiting the limits of work including, but not limited to, Contractor's employees, suppliers, vendors, truckers, and the District's representatives. The

Contractor's Project Health and Safety Representative will verify that site workers and visitors are in compliance with applicable health and safety requirements, and take action to ensure compliance where deficiencies are identified.

1.2 Disposal Operations and Transportation Plan

The Contractor is responsible for coordinating the transportation and disposal of excavated material in accordance with local, state, and federal regulations, including obtaining a CalTrans Transportation Permit if deemed necessary. The Contractor will be required to submit a *Disposal Operations and Transportation Plan*. The *Disposal Operations and Transportation Plan* will contain but is not limited to the following:

- Name of the disposal/recycling facilities to which the waste materials will be shipped.
- Method of shipment and an estimate of the number of loads needed for the identified waste shipment.
- Method for tracking the waste leaving the site and arriving at the disposal/recycling facility.
- Estimated project and daily schedule, including expected truck traffic flow and an approach to minimize truck traffic during peak commute hours
- A site plan showing site ingress and egress and truck staging areas.
- Identification of truck hauling routes.
- Indication that bills of lading/waste manifests for waste/recycle material leaving the site will be provided.

Following acceptance of the excavated waste fill material by the disposal facility, the Contractor will load the waste material into off-hauling trucks and transport the material directly to the disposal facility. All wastes will be disposed of at permitted facilities approved by the District. When offsite hauling occurs, the Contractor will provide signage and flaggers to control traffic flow and minimize disruption to traffic, as needed. Trucks will follow pre-established routes, as identified in the *Disposal Operations and Transportation Plan*. All vehicles carrying waste will be securely tarped before leaving the site. Disposal will be documented with appropriate manifests, weight tickets, and bills of lading. These documents will be electronically scanned and maintained as project records.

1.3 Decontamination Plan

The decontamination process will involve the removal of contaminants such as accumulated soil, dust, and other contamination from excavation equipment, vehicles and personnel, while these items are physically located in the decontamination station. The proper onsite management and offsite disposal of decontamination wastes such as wash water and contaminated protective equipment used by onsite personnel will be required.

A *Decontamination Plan* will be prepared by the Contractor for the proposed soil removal activities prior to implementation. The *Decontamination Plan* will describe specific procedures to be used during implementation of the soil removal activities to reduce the soil tracking offsite. The principal components of the *Decontamination Plan* are summarized below:

- Location of facilities for removal of soil and debris from personnel, equipment, and vehicles prior to egress from the site.
- Removal and containment of soil and other material from equipment and transportation vehicles.
- Decontamination of personnel and equipment exiting exclusion zones.
- Plans for temporary storage, characterization, and treatment or offsite disposal of decontamination wastes generated during decontamination activities.

The Contractor will prepare a detailed *Decontamination Plan* that will incorporate the following general principles and concepts.

- Decontamination will likely entail the use of physical devices such as brushes, brooms, sponges, and rags, and may include the use of rinse water.
- The use of water for decontamination will be minimized to the extent reasonable.
- Use of solvents to decontaminate equipment or use of petroleum products to prevent soil from adhering to the excavation equipment will not be allowed.
- Equipment mobilized to the site that has been exposed to contaminated material including dust, soil, or debris will either be treated as contaminated material and disposed of in accordance with applicable laws or will be decontaminated prior to leaving the site or prior to demobilization from the site.

1.4 Dust Control Plan

Material to be excavated contains PCBs, which may be aurally dispersed with dust during soil disturbing and handling operations. To mitigate the potential fugitive emissions of those compounds and maintain acceptable COC concentrations in air at the perimeter of the site during excavation, air monitoring and dust control practices will be implemented. The District's Contractor will prepare a *Dust Control Plan* for review by the District. The objective of the *Dust Control Plan* will be to minimize the occurrence of visual dust at and downwind of the construction site.

To monitor the effectiveness of the dust control practices, the Contractor will monitor the generation of dust during soil handling operations and perform construction personnel monitoring as described in their *Health and Safety Plan*. The Contractor's *Dust Control Plan* will identify specific procedures to be used during implementation of the remedial activities to reduce impacts due to dust. Dust control techniques that may be implemented include the following:

- Apply water to areas to be excavated before starting soil excavation.
- Control excavation activities and excavation rates to minimize the generation of dust.
- Operate a sprinkler or mist system adjacent to excavation and soil loading areas.
- Designate personnel with hoses or other watering equipment to supplement the sprinkler or misting measures.
- Mist or spray the exposed areas with water to prevent formation of dust while excavating, transferring material onsite, or loading transportation vehicles.
- Cover soil stockpiles, if present, with weighted plastic sheeting.
- Keep the drop heights to a minimum while loading transport vehicles.
- Keep vehicle speeds on the site below 5 miles per hour.
- Sweep streets as needed.
- Compliance with dust control measures provided by the Bay Area Air Quality Management District (BAAQMD, 2012) as applicable.

The District or its representative will perform dust monitoring using stationary, real-time monitoring equipment at the upwind and downwind locations and direct the Contractor as necessary to increase/modify dust control measures to ensure adherence to the BAAQMD and *Dust Control Plan* requirements. If either observations or measurements during perimeter air monitoring or complaints by air pollution control authorities or nearby residents indicate the need for more stringent dust control, the magnitude and frequency of the dust control measures may be increased. Palliatives may be added to the dust control water. If further dust control measures are needed due to meteorological conditions, such as strong winds, then certain portions of work may be stopped, windscreens may be constructed, or enclosed loading operations may be implemented.

1.5 Stormwater Pollution Prevention Plan

During execution of the remedial action, the District will implement erosion control and stormwater management measures in conformance with the Regional Water Quality Control Board General Construction Permit Order No. 2009-0009-DWQ. The District will prepare a construction Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will include specific descriptions and proposed measures to address the following:

- Identify a risk category for the project in accordance with regulatory requirements.
- Identify the relevant drainage areas to be protected during construction activities.
- Identify pollutant sources, including sources of sediment that may affect the quality of stormwater discharges associated with construction activities (stormwater discharges) from the excavation.
- Identify non-stormwater discharges.
- Identify, construct, implement in accordance with a time schedule, and maintain best management practices (BMPs) to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the site during excavation, including control of stormwater, erosion control, and sediment loading; control of drainage from soil stockpile areas; and monitoring and control of truck decontamination areas.
- Develop a maintenance schedule for BMPs installed during construction that are designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs).

Following preparation of the SWPPP, the District's Contractor will then employ BMPs to reduce the sediment load in runoff from the site. Stormwater management and erosion control measures will be implemented as follows:

- **Temporary Construction BMPs:** The specific construction BMPs employed by the Contractor during construction will be described in the SWPPP. However, it is anticipated that during soil-disturbing activities such as excavation, backfilling, compaction, and grading, the Contractor will install and maintain the following erosion and sediment tracking control measures:
 - Temporary cover on exposed soil slopes.
 - Fiber rolls along the top and toe of slopes and along slope contours to minimize runoff to and runoff from the excavation areas in advance of an anticipated rainfall.
 - Silt fences along the toe of slopes and at limits of work.
 - Material that must be stockpiled for further characterization after excavation will be held in the stockpiling staging area and covered with plastic sheeting.
 - Construction entrances and exits will be maintained along access routes.
 - Storm drains in the vicinity of the access routes will be equipped with drainage inlet protection.

Non-stormwater BMPs will be implemented in accordance with the SWPPP to address materials and equipment storage and handling within the limits of work. In particular, fuel and chemicals will be stored in such a manner as to prevent accidental spills from being released to the environment and/or impacting stormwater.

- **Post-Construction BMPs:** Following placement of backfill material and rough grading activities, the Contractor will stabilize the site by installing the following erosion control measures:
 - Erosion control blankets, hydroseed, and/or erosion control mulch on exposed soil slopes, as appropriate.
 - Fiber rolls along slope contours, as appropriate.
 - Silt fences along the toe of the graded slopes, as appropriate.

Regular inspections will be scheduled to maintain, adjust, and update the stormwater pollution controls implemented as described in the SWPPP, as needed.

ATTACHMENT E

CALEEMOD INPUT AND OUTPUT FILES

INPUT PARAMETERS

Air and GHG Emission Calculations using CalEEMod.2016.3.1

2000 Larkspur Circle
Model run date: 4/10/2017
Model run by: J.Sund

The model was rerun to incorporate information obtained from KJ on 2/10/2017. The following assumptions were made in running the model.

Project Characteristics

Project Name: 2000 Larkspur Circle
County: Marin
Land use setting: urban
Start of construction: 6/15/2017, assumed date.
Operational year: 2018 (not evaluating operational emissions, but entered to indicate construction work complete in 2018). KJ assumed 245 days total for project.
Select Utility Company: PG&E (unclear from PD what to choose, so selected one from drop down list)
Default parameters were accepted for the remainder of the information on this screen.

Land Use

Land use type: industrial
Land use subtype: chose user defined as other options were not relevant
Lot acreage: 2 acres
Square feet: 87,120(conversion from acres)
Population: 20 (assumed # of construction workers, haulers, oversight on site?)

Construction

Construction Phase – assumed two phases of work

Mobilization/Site Preparation

Phase Type – Site preparation (chosen from drop down)
State Date – assumed 6/15/17
End Date – assumed 7/6/17
Days/Week – assumed 5 day work week
Total days – 10

Excavation, Backfill, Disposal (includes restoration/stabilization)

Phase Type – Grading (chosen from drop down)
State Date – 7/5/2017, assume start once first phase complete
End Date – 5/23/2018
Days/Week – assumed 5 day work week
Total days – 230

Off-Road Equipment – Assume all equipment on site for mob/site prep, but only half time use per day (4 hr per day) with the exception of the pickup trucks

Equipment Type and Amount

- Up to 2 hydraulic excavators during removal
- Up to 2 front-end loaders during removal and backfill
- 1 dozer during removal, up to 2 for backfill
- Up to 2 flatbed delivery at beginning and end of job
- Up to 5 pickup trucks.

Hours/Day – 8

Horsepower and Load factor – accepted default values

Dust from Material Movement

Mobilization and Site Preparation – 37,000 material imported/exported. Assume mean speed of 7.1 (from PD). Rest of information accepted as default (moisture content)

Excavation, Backfill, Disposal – 37,000 material imported/exported, assume 15mph mean speed, 2 acres. Rest of information accepted as default (moisture content)

Demolition

Assume no demolition required

Trips and VMT

Mobilization and Site Preparation – assumed 20 workers will travel each day of mobilization. Remainder of information accepted default values

Excavation, Backfill and Disposal – assume 20 workers will travel each day of mobilization.

Assume 40 trucks in/out per day (hauling/import)

Assume 110 day T&D and 110 import at 40 trucks per day (220 day * 40 trucks/day = 8800)

Left other entries as default values

On-Road Fugitive Dust

For both phases assumed default values. Assume on-road is traffic to/from site?

Architectural Coatings – NA

Operational Mobile – all NA. Only construction related emissions required for project calcs.

Mitigation

Construction – assume defaults for all vehicle specific information. Equipment type reflects list entered in previous section

Checked box for water exposed area. Assumed 2 times/day.

Checked box for vehicle speed and assumed 15 mph. from PD.

Remainder of mitigation screens accepted as default. No values entered.

Home Project Characteristics Land Use Construction Operational Vegetation Mitigation Reporting Help Cascade Defaults

Project Characteristics

Project Detail

Project Name: 2000 Larkspur Landing Circle

Project Location: County: Marin

Windspeed (m/s): 2.2

Precipitation Frequency (days): 69

CEC Forecasting Climate Zone: 5

Land Use Setting: Urban

Start of Construction: Thursday, June 15, 2017

Operational Year: 2018

To look up the CEC Forecasting Climate Zone for this project, click the orange button.

CEC Forecasting Climate Zone Look-up

Pollutants

Select All Clear All

Pollutant Selection	Pollutant Full Name
<input checked="" type="checkbox"/>	Reactive Organic Gases (ROG)
<input checked="" type="checkbox"/>	Nitrogen Oxides (NOx)
<input checked="" type="checkbox"/>	Carbon Monoxide (CO)
<input checked="" type="checkbox"/>	Sulfur Dioxide (SO2)
<input checked="" type="checkbox"/>	Particulate Matter 10um (PM10)
<input checked="" type="checkbox"/>	Particulate Matter 2.5um (PM2.5)
<input checked="" type="checkbox"/>	Fugitive PM10um (PM10)
<input checked="" type="checkbox"/>	Fugitive PM2.5um (PM2.5)
<input checked="" type="checkbox"/>	Biogenic Carbon Dioxide (CO2)
<input checked="" type="checkbox"/>	Non-Biogenic Carbon Dioxide (CO2)
<input checked="" type="checkbox"/>	Carbon Dioxide (CO2)
<input checked="" type="checkbox"/>	Methane (CH4)
<input checked="" type="checkbox"/>	Nitrous Oxide (N2O)
<input checked="" type="checkbox"/>	CO2 Equivalent GHGs (CO2e)

Next >>

Utility Information

*If "User Defined" is selected, user must specify data source in Remarks

Select Utility Company: Pacific Gas & Electric Company

CO2 Intensity Factor (lb/MWh): 641.35

CH4 Intensity Factor (lb/MWh): 0.029

N2O Intensity Factor (lb/MWh): 0.006

Remarks

Start date not provided by KJ, so made assumption
 KJ construction schedule = 245 days total.
 Assume 5 day work week = 49 weeks, ~1 year

Home Project Characteristics Land Use Construction Operational Vegetation Mitigation Reporting Help Cascade Defaults

Land Use

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	Square Feet	Population
Industrial	User Defined Industrial	2	User Defined Unit	2	87,120	20

Import csv Default Undo

Population:

Lot Acreage:

<< Previous Next >>

Remarks

KJ provided 2 acres
 Assume population is construction work total + haulers + oversight - 20 per day

Cascade Defaults

Construction

Construction Phase: Off-Road Equipment | Dust from Material Movement | Demolition | Trips And VMT | On-Road Fugitive Dust | Architectural Coatings

*Make sure that the operational year is later than the final construction year

Phase Name	Phase Type	Start Date	End Date	Days/Week	Total Days	Phase Description
Mobilization/Site Preparation	Site Preparation	06/15/2017	7/5/2017	5 Days/Week	15	ID utilities, clear and grub, site pr...
Excavation, Backfill, Disposal	Grading	06/17/2017	5/11/2018	5 Days/Week	230	Soil Excavation, Backfill and Offsit...
*		2/13/2017	2/13/2017			

Remarks
 Assume two phases: mobilization/site prep and then active remediation
 Construction schedule from KJ

Cascade Defaults

Construction

Construction Phase: Off-Road Equipment | Dust from Material Movement | Demolition | Trips And VMT | On-Road Fugitive Dust | Architectural Coatings

Select Construction Phase

Phase Name: Mobilization/Site Preparation | |

Equipment Type	Unit Amount	Hours/Day	HorsePower (HP)	Load Factor
Other Construction Equipment	5	8	187	0.41
Excavators	2	4	367	0.48
Rubber Tired Loaders	2	4	97	0.37
Tractors/Loaders/Backhoes	2	4	97	0.3685
Other Construction Equipment	2	4	168	0.3953
*				

Remarks
 Other construction equipment includes work trucks and flat bed delivery trucks
 Assume 5 pickup trucks throughout job
 up to 2 flatbed pickup at beginning and end of job
 Assume all construction equipment on site during mob/site prep. half time

Cascade Defaults

Construction

Construction Phase | Off-Road Equipment | Dust from Material Movement | Demolition | Trips And VMT | On-Road Fugitive Dust | Architectural Coatings

Select Construction Phase

Phase Name:

Equipment Type	Unit Amount	Hours/Day	HorsePower (HP)	Load Factor
Other Construction Equipment	5	8	187	0.41
Excavators	2	8	247	0.4
Rubber Tired Dozers	2	8	97	0.37
Tractors/Loaders/Backhoes	2	8	97	0.3685
Other Construction Equipment	2	1	172	0.4154
**				

Remarks

Updated with KJ list
 Other construction equipment is work trucks and flat bed delivery vehicles
 Assume flat bed only needed at end.

Construction

Construction Phase | Off-Road Equipment | Dust from Material Movement | Demolition | Trips And VMT | On-Road Fugitive Dust | Architectural Coatings

Phase Name	Material Imported	Material Exported	Size Metric	Material Import/Export Phased?	Mean Vehicle Speed (mph)	Total Acres Graded	Material Moisture Content (%) Bulldozing	Material Moisture Content (%) Truck Loading	Material Silt Content (%)
Excavation, Backfill, Disposal	37,000	37,000	Cubic Yards	<input checked="" type="checkbox"/>	7.1	2	7.9	12	6.9

Remarks

KJ quantities and acres
 Assume phased as backfill may not be concurrent with excavation haul out.
 Leave default for moisture content/silt content

Construction

Construction Phase | Off-Road Equipment | Dust from Material Movement | Demolition | **Trips And VMT** | On-Road Fugitive Dust | Architectural Coatings

Import csv | Default | Undo

Phase Name	# Trips Worker (/day)	# Trips Vendor (/day)	Total # Trips Hauling	TripLength Worker (miles)	TripLength Vendor (miles)	TripLength Hauling (miles)	Vehicle Class Worker	Vehicle Class Vendor	Vehicle Class Hauling
Mobilization/Site Preparation	20	0	0	10.8	7.3	20	LDA,LDT1,LDT2	HHDT,MHDT	HHDT
Excavation, Backfill, Disposal	40	0	4,400	10.8	7.3	20	LDA,LDT1,LDT2	HHDT,MHDT	HHDT

Remarks

KJ assume 30 trucks in/out per day (hauling/import)
 KJ assume 110 day T&D and 110 import at 40 trucks per day (220 day *40 trucks/day = 8800)
 Left other entries as default values

<< Previous | Next >>

Construction

Construction Phase | Off-Road Equipment | Dust from Material Movement | Demolition | Trips And VMT | **On-Road Fugitive Dust** | Architectural Coatings

Import csv | Default | Undo

Phase Name	% Pave Worker	% Pave Vendor	% Pave Hauling	Road Silt Loading (g/m2)	Material Silt Content (%)	Material Moisture Content (%)	Average Vehicle Weight (tons)	Mean Vehicle Speed (mph)
Mobilization/Site Preparation	100	100	100	0.1	8.5	0.5	2.4	40
Excavation, Backfill, Disposal	100	100	100	0.1	8.5	0.5	2.4	40

Remarks

Assume all paved on-road, leave default as is.

<< Previous | Next >>

Construction

Construction Phase | Off-Road Equipment | Dust from Material Movement | Demolition | Trips And VMT | On-Road Fugitive Dust | **Architectural Coatings**

Import csv Default Undo

Phase Name	Residential Interior VOC (g/L)	Residential Interior Area (sqft)	Residential Exterior VOC (g/L)	Residential Exterior Area (sqft)	Non Residential Interior VOC (g/L)	Non Residential Interior Area (sqft)	Non Residential Exterior VOC (g/L)	Non Residential Exterior Area (sqft)	VOC for Parking Lot Paint (g/L)	Parking Area (sqft)

Remarks: NA

<< Previous Next >>

All operational screens NA. Not copied here

Cascade Defaults

Vegetation

Land Use Change | Sequestration

	Vegetation Land Use Type	Vegetation Land Use Subtype	Initial Acres	Final Acres	Annual CO2 accumulation per acre (tonnes CO2/year)
▶	Others	Others	0	10.5	0
*					

Remarks

KJ reports no trees currently on-site
 2016 Google Earth image shows site is graded, no veg
 Assume 0 veg to start and 10.5 acres vegetated for stabilization. Assume entire site not just 2 acres removed/backfilled



Vegetation

Land Use Change | Sequestration

Import csv | Default | Undo

	Broad Species Class	Number Of New Trees	Annual CO2 accumulation per tree (tonnes CO2/year)
*			

Remarks
 NA
 No trees currently, no trees planned?

<< Previous | Next >>

Cascade Defaults

Mitigation

Construction | Traffic | Area | Energy | Water | Solid Waste

Off-Road Equipment

[C-1] Import csv | Default | Undo

	Equipment Type	Fuel Type	Engine Tier	Number Of Equipments Mitigated	Total Number Of Offroad Equipments	DPF Level	Using Oxidation Catalyst (%Reduction)
	Excavators	Diesel	No Change	0	4	No Change	0
	Other Construction Equipment	Diesel	No Change	0	14	No Change	0
	Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0
	Rubber Tired Loaders	Diesel	No Change	0	2	No Change	0
	Tractors/Loaders/Backhoes	Diesel	No Change	0	4	No Change	0

Fugitive Dust

Soil Stabilizer for Unpaved Roads

PM10 (% Reduction)

PM2.5 (% Reduction)

Water Exposed Area

Frequency (per day)

PM10 (% Reduction)

PM2.5 (% Reduction)

Unpaved Road Mitigation

Moisture Content (%)

Vehicle Speed (mph)

Replace Ground Cover of Area Disturbed

PM10 (% Reduction)

PM2.5 (% Reduction)

Clean Paved Road

% PM Reduction

*The mitigation should be applicable to land use project evaluated.
 *Remarks" box should contain percent reduction justification.

Remarks
 Assume equipment remains with default values above
 Un paved vehicle speed in PD was 10-15mph. Assume high end.
 This should pull from other vehicle list. Can't update total eqpt numbers here

<< Previous | Next >>

Mitigation

Construction Traffic Area Energy Water Solid Waste

Land Use & Site Enhancement Commute

Project Setting: Urban

*The mitigation should be applicable to land use project evaluated.
Remarks box should contain percent reduction justification.

Import csv

Land Use

- Increase Density [LUT-1] 0 Dwelling Units/acre
- Increase Diversity [LUT-3] 0 Jobs/Job acre
- Improve Walkability Design [LUT-9] Intersections/Square Miles 0
- Improve Destination Accessibility [LUT-4] Distance to Downtwn/Job Ctr (Miles) 0
- Increase Transit Accessibility [LUT-5] Distance to Transit Station (Miles) 0
- Integrate Below Market Rate Housing [LUT-6] % Dwelling Units Below Market Rate 0

Neighborhood Enhancements

- Improve Pedestrian Network [SDT-1] [Dropdown]
- Provide Traffic Calming Measures [SDT-2] % Streets with Improvement [Dropdown] % Intersections with Improvement [Dropdown]
- Implement NEV Network [SDT-3]

Parking Policy/Pricing

- Limit Parking Supply [PDT-1] % Reduction in Spaces 0
- Unbundle Parking Costs [PDT-2] Monthly Parking Cost (\$) 0
- On-Street Market Pricing [PDT-3] % Increase in Price 0

Transit Improvement

- Provide BRT System [TST-1] % Lines BRT 0
- Expand Transit Network [TST-3] % Increase Transit Coverage 0
- Increase Transit Frequency [TST-4] Level of Implementation [Dropdown] % Reduction in Headways 0

Remarks: Leave as is. Assume urban

<< Previous Next >>

Mitigation categories NA: Area, Energy, water, solid waste. No entries made, no screenshots provided

2000 Larkspur Landing Circle - Marin County, Annual

**2000 Larkspur Landing Circle
Marin County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	2.00	User Defined Unit	2.00	86,360.00	20

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	69
Climate Zone	5			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Start date provided by KJ
 KJ construction schedule = 245 days total.
 Assume 5 day work week = 49 weeks, ~1 year

Land Use - KJ provided 2 acres
 Updated sf from KJ remedial plan received 2/27/17
 Assume population is construction work total + haulers + oversight - 20 per day
 Construction Phase - Assume two phases: mobilization/site prep and then active remediation
 Construction schedule from KJ

Off-road Equipment - For mobilization assume all equipment will be mobilized to site but only those shown above will be actively used for site prep.
 other construction equipment includes work trucks and flat panel delivery trucks

Off-road Equipment - Updated with KJ list
 Other construction equipment is work trucks and flat bed delivery vehicles

2000 Larkspur Landing Circle - Marin County, Annual

Assume flat bed only needed at end.

Off-road Equipment - Other construction equipment includes work trucks and flat bed delivery trucks

Assume 5 pickup trucks throughout job

up to 2 flatbed pickup at beginning and end of job

Assume all construction equipment on site during mob/site prep. half time

Trips and VMT - KJ assume 40 trucks in/out per day (hauling/import)

KJ assume 110 day T&D and 110 import at 20 trucks per day (220 day *20 trucks/day = 4400) - leave this same.

Left other entries as default values

On-road Fugitive Dust - Assume all paved on-road, leave default as is.

Grading - KJ quantities from remedial plan received on 2/27/17

Assume phased as backfill may not be concurrent with excavation haul out.

Leave default for moisture content/silt content

Architectural Coating - NA

Energy Use -

Land Use Change - KJ reports no trees currently on-site

2016 Google Earth image shows site is graded, no veg

Assume 0 veg to start and 10.5 acres vegetated for stabilization. Assume entire site not just 2 acres removed/backfilled

Sequestration - NA

No trees currently, no trees planned?

Construction Off-road Equipment Mitigation - Assume equipment remains with default values above

Un paved vehicle speed in PD was 10-15mph. Assume high end.

This should pull from other vehicle list. Can't update total eqpt numbers here

Mobile Land Use Mitigation - Leave as is. Assume urban

Area Mitigation - NA

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	150	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	4.00	230.00
tblConstructionPhase	NumDays	2.00	15.00
tblGrading	AcresOfGrading	115.00	2.00
tblGrading	MaterialExported	0.00	39,720.00

2000 Larkspur Landing Circle - Marin County, Annual

tblGrading	MaterialImported	0.00	39,720.00
tblLandUse	BuildingSpaceSquareFeet	0.00	86,360.00
tblLandUse	LandUseSquareFeet	0.00	86,360.00
tblLandUse	LotAcreage	0.00	2.00
tblLandUse	Population	0.00	20.00
tblOffRoadEquipment	HorsePower	247.00	97.00
tblOffRoadEquipment	HorsePower	158.00	367.00
tblOffRoadEquipment	HorsePower	158.00	247.00
tblOffRoadEquipment	HorsePower	172.00	187.00
tblOffRoadEquipment	HorsePower	172.00	168.00
tblOffRoadEquipment	HorsePower	172.00	187.00
tblOffRoadEquipment	HorsePower	203.00	97.00
tblOffRoadEquipment	LoadFactor	0.40	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.48
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.42	0.41
tblOffRoadEquipment	LoadFactor	0.42	0.40
tblOffRoadEquipment	LoadFactor	0.42	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblRoadDust	MeanVehicleSpeed	40	15
tblTripsAndVMT	HaulingTripNumber	4,965.00	4,400.00
tblTripsAndVMT	WorkerTripNumber	38.00	20.00
tblTripsAndVMT	WorkerTripNumber	35.00	40.00

2000 Larkspur Landing Circle - Marin County, Annual

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					
2017	0.1959	2.4908	1.1932	3.5700e-003	1.4566	0.0920	1.5486	0.7777	0.0847	0.8624	0.0000	335.3706	335.3706	0.0734	0.0000	337.2063
2018	0.1167	1.5125	0.7626	2.5800e-003	1.4387	0.0509	1.4896	0.7748	0.0469	0.8216	0.0000	239.8776	239.8776	0.0509	0.0000	241.1502
Maximum	0.1959	2.4908	1.1932	3.5700e-003	1.4566	0.0920	1.5486	0.7777	0.0847	0.8624	0.0000	335.3706	335.3706	0.0734	0.0000	337.2063

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					
2017	0.1959	2.4908	1.1932	3.5700e-003	0.6852	0.0920	0.7771	0.3579	0.0847	0.4425	0.0000	335.3704	335.3704	0.0734	0.0000	337.2060
2018	0.1167	1.5125	0.7626	2.5800e-003	0.6739	0.0509	0.7248	0.3556	0.0469	0.4024	0.0000	239.8775	239.8775	0.0509	0.0000	241.1501
Maximum	0.1959	2.4908	1.1932	3.5700e-003	0.6852	0.0920	0.7771	0.3579	0.0847	0.4425	0.0000	335.3704	335.3704	0.0734	0.0000	337.2060

2000 Larkspur Landing Circle - Marin County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	53.06	0.00	50.57	54.05	0.00	49.82	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-15-2017	9-14-2017	0.3703	0.3703
		Highest	0.3703	0.3703

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	0.3823	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.3823	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

2000 Larkspur Landing Circle - Marin County, Annual

2.3 Vegetation

Vegetation

	CO2e
Category	MT
Vegetation Land Change	0.0000
Total	0.0000

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Mobilization/Site Preparation	Site Preparation	6/15/2017	7/5/2017	5	15	ID utilities, clear and grub, site preparation, erosion control, ingress/egress
2	Excavation, Backfill, Disposal	Grading	7/6/2017	5/23/2018	5	230	Soil Excavation, Backfill and Offsite disposal

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

2000 Larkspur Landing Circle - Marin County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Mobilization/Site Preparation	Excavators	2	4.00	367	0.48
Mobilization/Site Preparation	Graders	1	8.00	187	0.41
Mobilization/Site Preparation	Other Construction Equipment	5	8.00	187	0.41
Mobilization/Site Preparation	Other Construction Equipment	2	4.00	168	0.40
Mobilization/Site Preparation	Rubber Tired Loaders	2	4.00	97	0.37
Mobilization/Site Preparation	Scrapers	1	8.00	367	0.48
Mobilization/Site Preparation	Tractors/Loaders/Backhoes	2	4.00	97	0.37
Excavation, Backfill, Disposal	Excavators	2	8.00	247	0.40
Excavation, Backfill, Disposal	Graders	1	8.00	187	0.41
Excavation, Backfill, Disposal	Other Construction Equipment	5	8.00	187	0.41
Excavation, Backfill, Disposal	Other Construction Equipment	2	1.00	172	0.42
Excavation, Backfill, Disposal	Rubber Tired Dozers	2	8.00	97	0.37
Excavation, Backfill, Disposal	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Mobilization/Site Preparation	15	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Excavation, Backfill, Disposal	14	40.00	0.00	4,400.00	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

2000 Larkspur Landing Circle - Marin County, Annual

3.2 Mobilization/Site Preparation - 2017

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					0.0119	0.0000	0.0119	1.2900e-003	0.0000	1.2900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0290	0.3402	0.1878	3.7000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	33.9573	33.9573	0.0104	0.0000	34.2174
Total	0.0290	0.3402	0.1878	3.7000e-004	0.0119	0.0155	0.0275	1.2900e-003	0.0143	0.0156	0.0000	33.9573	33.9573	0.0104	0.0000	34.2174

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	6.9000e-004	5.3000e-004	5.0600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1535	1.1535	4.0000e-005	0.0000	1.1544
Total	6.9000e-004	5.3000e-004	5.0600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1535	1.1535	4.0000e-005	0.0000	1.1544

2000 Larkspur Landing Circle - Marin County, Annual

3.2 Mobilization/Site Preparation - 2017

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					5.3700e-003	0.0000	5.3700e-003	5.8000e-004	0.0000	5.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0290	0.3402	0.1878	3.7000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	33.9572	33.9572	0.0104	0.0000	34.2173
Total	0.0290	0.3402	0.1878	3.7000e-004	5.3700e-003	0.0155	0.0209	5.8000e-004	0.0143	0.0149	0.0000	33.9572	33.9572	0.0104	0.0000	34.2173

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	6.9000e-004	5.3000e-004	5.0600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1535	1.1535	4.0000e-005	0.0000	1.1544
Total	6.9000e-004	5.3000e-004	5.0600e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1535	1.1535	4.0000e-005	0.0000	1.1544

2000 Larkspur Landing Circle - Marin County, Annual

3.3 Excavation, Backfill, Disposal - 2017

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					1.3906	0.0000	1.3906	0.7622	0.0000	0.7622	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1390	1.7065	0.7724	2.0000e-003		0.0737	0.0737		0.0678	0.0678	0.0000	185.0793	185.0793	0.0567	0.0000	186.4970
Total	0.1390	1.7065	0.7724	2.0000e-003	1.3906	0.0737	1.4643	0.7622	0.0678	0.8299	0.0000	185.0793	185.0793	0.0567	0.0000	186.4970

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	0.0155	0.4347	0.1422	9.8000e-004	0.0328	2.6200e-003	0.0355	8.6600e-003	2.5000e-003	0.0112	0.0000	95.6477	95.6477	5.6600e-003	0.0000	95.7891
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	0.0118	8.9300e-003	0.0857	2.2000e-004	0.0200	1.5000e-004	0.0202	5.3200e-003	1.4000e-004	5.4600e-003	0.0000	19.5329	19.5329	6.2000e-004	0.0000	19.5484
Total	0.0273	0.4436	0.2279	1.2000e-003	0.0529	2.7700e-003	0.0556	0.0140	2.6400e-003	0.0166	0.0000	115.1805	115.1805	6.2800e-003	0.0000	115.3374

2000 Larkspur Landing Circle - Marin County, Annual

3.3 Excavation, Backfill, Disposal - 2017

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					0.6258	0.0000	0.6258	0.3430	0.0000	0.3430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1390	1.7065	0.7724	2.0000e-003		0.0737	0.0737		0.0678	0.0678	0.0000	185.0791	185.0791	0.0567	0.0000	186.4968
Total	0.1390	1.7065	0.7724	2.0000e-003	0.6258	0.0737	0.6995	0.3430	0.0678	0.4107	0.0000	185.0791	185.0791	0.0567	0.0000	186.4968

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	0.0155	0.4347	0.1422	9.8000e-004	0.0328	2.6200e-003	0.0355	8.6600e-003	2.5000e-003	0.0112	0.0000	95.6477	95.6477	5.6600e-003	0.0000	95.7891
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	0.0118	8.9300e-003	0.0857	2.2000e-004	0.0200	1.5000e-004	0.0202	5.3200e-003	1.4000e-004	5.4600e-003	0.0000	19.5329	19.5329	6.2000e-004	0.0000	19.5484
Total	0.0273	0.4436	0.2279	1.2000e-003	0.0529	2.7700e-003	0.0556	0.0140	2.6400e-003	0.0166	0.0000	115.1805	115.1805	6.2800e-003	0.0000	115.3374

2000 Larkspur Landing Circle - Marin County, Annual

3.3 Excavation, Backfill, Disposal - 2018

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					1.3906	0.0000	1.3906	0.7622	0.0000	0.7622	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0976	1.1815	0.5996	1.6200e-003		0.0494	0.0494		0.0454	0.0454	0.0000	147.6119	147.6119	0.0460	0.0000	148.7608
Total	0.0976	1.1815	0.5996	1.6200e-003	1.3906	0.0494	1.4400	0.7622	0.0454	0.8076	0.0000	147.6119	147.6119	0.0460	0.0000	148.7608

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	0.0105	0.3247	0.1020	7.9000e-004	0.0319	1.3800e-003	0.0333	8.3100e-003	1.3200e-003	9.6300e-003	0.0000	76.8647	76.8647	4.5100e-003	0.0000	76.9774
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	8.5700e-003	6.3200e-003	0.0610	1.7000e-004	0.0162	1.2000e-004	0.0163	4.3200e-003	1.1000e-004	4.4200e-003	0.0000	15.4010	15.4010	4.4000e-004	0.0000	15.4121
Total	0.0191	0.3310	0.1630	9.6000e-004	0.0481	1.5000e-003	0.0496	0.0126	1.4300e-003	0.0141	0.0000	92.2657	92.2657	4.9500e-003	0.0000	92.3895

2000 Larkspur Landing Circle - Marin County, Annual

3.3 Excavation, Backfill, Disposal - 2018

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					0.6258	0.0000	0.6258	0.3430	0.0000	0.3430	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0976	1.1815	0.5996	1.6200e-003		0.0494	0.0494		0.0454	0.0454	0.0000	147.6118	147.6118	0.0460	0.0000	148.7606
Total	0.0976	1.1815	0.5996	1.6200e-003	0.6258	0.0494	0.6752	0.3430	0.0454	0.3884	0.0000	147.6118	147.6118	0.0460	0.0000	148.7606

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	0.0105	0.3247	0.1020	7.9000e-004	0.0319	1.3800e-003	0.0333	8.3100e-003	1.3200e-003	9.6300e-003	0.0000	76.8647	76.8647	4.5100e-003	0.0000	76.9774
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	8.5700e-003	6.3200e-003	0.0610	1.7000e-004	0.0162	1.2000e-004	0.0163	4.3200e-003	1.1000e-004	4.4200e-003	0.0000	15.4010	15.4010	4.4000e-004	0.0000	15.4121
Total	0.0191	0.3310	0.1630	9.6000e-004	0.0481	1.5000e-003	0.0496	0.0126	1.4300e-003	0.0141	0.0000	92.2657	92.2657	4.9500e-003	0.0000	92.3895

4.0 Operational Detail - Mobile

2000 Larkspur Landing Circle - Marin County, Annual

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
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	0.577091	0.045512	0.202682	0.115815	0.019822	0.005054	0.010113	0.010039	0.001995	0.004376	0.006002	0.000679	0.000822

2000 Larkspur Landing Circle - Marin County, Annual

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

2000 Larkspur Landing Circle - Marin County, Annual

	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	0.3823	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Unmitigated	0.3823	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0450					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	0.3823	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

2000 Larkspur Landing Circle - Marin County, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0450					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3373					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005
Total	0.3823	0.0000	2.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.0000e-005	4.0000e-005	0.0000	0.0000	4.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

2000 Larkspur Landing Circle - Marin County, Annual

	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

2000 Larkspur Landing Circle - Marin County, Annual

7.2 Water by Land Use

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

2000 Larkspur Landing Circle - Marin County, Annual

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
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2000 Larkspur Landing Circle - Marin County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

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

11.0 Vegetation

2000 Larkspur Landing Circle - Marin County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	0.0000	0.0000	0.0000	0.0000

11.1 Vegetation Land Change

Vegetation Type

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Others	0 / 10.5	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

**2000 Larkspur Landing Circle
Marin County, Mitigation Report**

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavation, Backfill, Disposal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobilization/Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Excavators	Diesel	No Change	0	4	No Change	0.00
Graders	Diesel	No Change	0	2	No Change	0.00
Other Construction Equipment	Diesel	No Change	0	14	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Loaders	Diesel	No Change	0	2	No Change	0.00
Scrapers	Diesel	No Change	0	1	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	4	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Unmitigated tons/yr							Unmitigated mt/yr					
Excavators	9.54900E-002	1.25839E+000	5.11140E-001	2.07000E-003	3.92900E-002	3.61500E-002	0.00000E+000	1.90394E+002	1.90394E+002	5.87300E-002	0.00000E+000	1.91862E+002
Graders	6.47900E-002	8.97500E-001	2.37730E-001	8.20000E-004	2.92300E-002	2.68900E-002	0.00000E+000	7.51791E+001	7.51791E+001	2.31900E-002	0.00000E+000	7.57588E+001
Other Construction Equipment	2.17300E-002	2.37970E-001	1.50710E-001	2.20000E-004	1.25600E-002	1.15500E-002	0.00000E+000	2.03609E+001	2.03609E+001	6.27000E-003	0.00000E+000	2.05178E+001
Rubber Tired Loaders	3.59000E-003	2.96000E-002	1.98000E-002	2.00000E-005	2.51000E-003	2.31000E-003	0.00000E+000	2.11831E+000	2.11831E+000	6.50000E-004	0.00000E+000	2.13454E+000
Scrapers	9.91000E-003	1.24420E-001	7.77600E-002	1.10000E-004	4.99000E-003	4.59000E-003	0.00000E+000	1.05370E+001	1.05370E+001	3.23000E-003	0.00000E+000	1.06177E+001
Tractors/Loaders/Backhoes	7.00200E-002	6.80260E-001	5.62650E-001	7.40000E-004	4.99800E-002	4.59800E-002	0.00000E+000	6.80593E+001	6.80593E+001	2.10000E-002	0.00000E+000	6.85842E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated tons/yr							Mitigated mt/yr					
Excavators	9.54900E-002	1.25839E+000	5.11140E-001	2.07000E-003	3.92900E-002	3.61500E-002	0.00000E+000	1.90394E+002	1.90394E+002	5.87300E-002	0.00000E+000	1.91862E+002
Graders	6.47900E-002	8.97500E-001	2.37730E-001	8.20000E-004	2.92300E-002	2.68900E-002	0.00000E+000	7.51790E+001	7.51790E+001	2.31900E-002	0.00000E+000	7.57587E+001
Other Construction Equipment	2.17300E-002	2.37970E-001	1.50710E-001	2.20000E-004	1.25600E-002	1.15500E-002	0.00000E+000	2.03609E+001	2.03609E+001	6.27000E-003	0.00000E+000	2.05178E+001
Rubber Tired Loaders	3.59000E-003	2.96000E-002	1.98000E-002	2.00000E-005	2.51000E-003	2.31000E-003	0.00000E+000	2.11831E+000	2.11831E+000	6.50000E-004	0.00000E+000	2.13454E+000
Scrapers	9.91000E-003	1.24420E-001	7.77600E-002	1.10000E-004	4.99000E-003	4.59000E-003	0.00000E+000	1.05370E+001	1.05370E+001	3.23000E-003	0.00000E+000	1.06177E+001
Tractors/Loaders/Backhoes	7.00200E-002	6.80260E-001	5.62650E-001	7.40000E-004	4.99800E-002	4.59800E-002	0.00000E+000	6.80592E+001	6.80592E+001	2.10000E-002	0.00000E+000	6.85842E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20802E-006	1.20802E-006	0.00000E+000	0.00000E+000	1.14666E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.19714E-006	1.19714E-006	0.00000E+000	0.00000E+000	1.18798E-006
Other Construction Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.82273E-007	9.82273E-007	0.00000E+000	0.00000E+000	1.46215E-006
Rubber Tired Loaders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.49039E-007	9.49039E-007	0.00000E+000	0.00000E+000	1.88365E-006
Tractors/Loaders/Balkhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.17545E-006	1.17545E-006	0.00000E+000	0.00000E+000	1.16645E-006

Fugitive Dust Mitigation

Yes/No Mitigation Measure Mitigation Input Mitigation Input Mitigation Input

No	Soil Stabilizer for unpaved Roads	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
No	Replace Ground Cover of Area Disturbed	PM10 Reduction	0.00	PM2.5 Reduction	0.00		
Yes	Water Exposed Area	PM10 Reduction	55.00	PM2.5 Reduction	55.00	Frequency (per day)	2.00
No	Unpaved Road Mitigation	Moisture Content %	0.00	Vehicle Speed (mph)	15.00		
No	Clean Paved Road	% PM Reduction	0.00				

Phase	Source	Unmitigated		Mitigated		Percent Reduction	
		PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Excavation, Backfill, Disposal	Fugitive Dust	2.78	1.52	1.25	0.69	0.55	0.55
Excavation, Backfill, Disposal	Roads	0.10	0.03	0.10	0.03	0.00	0.00
Mobilization/Site Preparation	Fugitive Dust	0.01	0.00	0.01	0.00	0.55	0.55
Mobilization/Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Urban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
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No	Land Use	Increase Density	0.00	0.00	0.00
No	Land Use	Increase Diversity	-0.01	0.13	
No	Land Use	Improve Walkability Design	0.00	0.00	
No	Land Use	Improve Destination Accessibility	0.00	0.00	
No	Land Use	Increase Transit Accessibility	0.25	0.00	
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00	
	Land Use	Land Use SubTotal	0.00		
No	Neighborhood Enhancements	Improve Pedestrian Network			
No	Neighborhood Enhancements	Provide Traffic Calming Measures			
No	Neighborhood Enhancements	Implement NEV Network	0.00		
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00		
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00	
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00	
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00	
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00		
No	Transit Improvements	Provide BRT System	0.00	0.00	
No	Transit Improvements	Expand Transit Network	0.00	0.00	
No	Transit Improvements	Increase Transit Frequency	0.00		0.00
	Transit Improvements	Transit Improvements Subtotal	0.00		
		Land Use and Site Enhancement Subtotal	0.00		
No	Commute	Implement Trip Reduction Program		0.00	
No	Commute	Transit Subsidy		0.00	
No	Commute	Implement Employee Parking "Cash Out"	7.70	0.00	

No	Commute	Workplace Parking Charge		0.00	
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00		
No	Commute	Market Commute Trip Reduction Option	0.00	0.00	
No	Commute	Employee Vanpool/Shuttle	0.00	0.00	2.00
No	Commute	Provide Ride Sharing Program	15.00	0.00	
	Commute	Commute Subtotal	0.00		
No	School Trip	Implement School Bus Program	0.00	0.00	
		Total VMT Reduction	0.00		

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	0.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy	0.00	0.00
No	Use Reclaimed Water	0.00	0.00
No	Use Grey Water	0.00	
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction	0.00	
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape	0.00	0.00

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

2000 Larkspur Landing Circle - Marin County, Summary Report

**2000 Larkspur Landing Circle
Marin, Summary Report**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	2.00	User Defined Unit	2.00	86,360.00	20

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	69
Climate Zone	5			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments

Only CalEEMod defaults were used.

Project Characteristics - Start date provided by KJ
 KJ construction schedule = 245 days total.
 Assume 5 day work week = 49 weeks, ~1 year

Land Use - KJ provided 2 acres
 Updated sf from KJ remedial plan received 2/27/17
 Assume population is construction work total + haulers + oversight - 20 per day

Construction Phase - Assume two phases: mobilization/site prep and then active remediation
 Construction schedule from KJ

Off-road Equipment - For mobilization assume all equipment will be mobilized to site but only those shown above will be actively used for site prep.
 other construction equipment includes work trucks and flat panel delivery trucks

Off-road Equipment - Updated with KJ list

2000 Larkspur Landing Circle - Marin County, Summary Report

Other construction equipment is work trucks and flat bed delivery vehicles
Assume flat bed only needed at end.

Off-road Equipment - Other construction equipment includes work trucks and flat bed delivery trucks
Assume 5 pickup trucks throughout job
up to 2 flatbed pickup at beginning and end of job
Assume all construction equipment on site during mob/site prep. half time

Trips and VMT - KJ assume 40 trucks in/out per day (hauling/import)
KJ assume 110 day T&D and 110 import at 20 trucks per day (220 day *20 trucks/day = 4400) - leave this same.
Left other entries as default values

On-road Fugitive Dust - Assume all paved on-road, leave default as is.

Grading - KJ quantities from remedial plan received on 2/27/17
Assume phased as backfill may not be concurrent with excavation haul out.
Leave default for moisture content/silt content

Architectural Coating - NA

Energy Use -

Land Use Change - KJ reports no trees currently on-site
2016 Google Earth image shows site is graded, no veg
Assume 0 veg to start and 10.5 acres vegetated for stabilization. Assume entire site not just 2 acres removed/backfilled

Sequestration - NA
No trees currently, no trees planned?

Construction Off-road Equipment Mitigation - Assume equipment remains with default values above
Un paved vehicle speed in PD was 10-15mph. Assume high end.
This should pull from other vehicle list. Can't update total eqpt numbers here

Mobile Land Use Mitigation - Leave as is. Assume urban

Area Mitigation - NA

2.0 Peak Daily Emissions

Peak Daily Construction Emissions

Peak Daily Construction Emissions

2000 Larkspur Landing Circle - Marin County, Summary Report

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
Year	Phase	lb/day											
2017	Site Preparation	3.9695 W	45.4290 W	25.7612 S	0.0506 S	3.8256 S	2.1203 S	3.9695 W	45.4290 W	25.7612 S	0.0506 S	2.9507 S	2.0258 S
	Peak Daily Total	3.9695 W	45.4290 W	25.7612 S	0.0506 S	3.8256 S	2.1203 S	3.9695 W	45.4290 W	25.7612 S	0.0506 S	2.9507 S	2.0258 S
	Air District Threshold												
	Exceed Significance?												

Peak Daily Operational Emissions

Peak Daily Operational Emissions

		Unmitigated						Mitigated					
		ROG	NOX	CO	SO2	PM10	PM2.5	ROG	NOX	CO	SO2	PM10	PM2.5
	Operational Activity	lb/day											
On-Site	Area	2.0949 S	0.0000 S	2.1000e-004 S	0.0000 S	0.0000 S	0.0000 S	2.0949 S	0.0000 S	2.1000e-004 S	0.0000 S	0.0000 S	0.0000 S
On-Site	Energy	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S
Off-Site	Mobile	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S	0.0000 S
	Peak Daily Total	2.0949 S	0.0000 S	2.1000e-004 S	0.0000 S	0.0000 S	0.0000 S	2.0949 S	0.0000 S	2.1000e-004 S	0.0000 S	0.0000 S	0.0000 S
	Air District Threshold												
	Exceed Significance?												

3.0 Annual GHG Emissions

Annual GHG

Annual GHG

ATTACHMENT F

SITE-SPECIFIC RISK-BASED SCREENING LEVEL (RBSL) OF PCBS FOR CHILDREN

ATTACHMENT F
Site-Specific Risk-Based Screening Level (RBSL) of PCBs for Children

Child Resident (age birth to < 6 yr)

RBSL ($\mu\text{g}/\text{m}^3$)	EF (day/yr)	ED (yr)	ET (hours/day)	CF (days/hrs)	AT-c (day)	IUR ($\mu\text{g}/\text{m}^3$) ⁻¹	TR
7.7E-02	250	1.00	24	0.04	25,550	1.3E-03	1.0E-06

Equation: $\text{RBSL} = \text{TR} \times \text{AT-c} \times \text{CF} / (\text{EF} \times \text{ED} \times \text{ET} \times \text{CF} \times \text{IUR})$ **Assumptions:**

RBSL	= risk-based screening level	$\mu\text{g}/\text{m}^3$	Calculated
TR	= target risk	unitless	1.E-06
AT-c	= averaging time, cancer	days	70 year lifetime x 365 days/year
EF	= exposure frequency	days/year	Excavation occurs 6 days a week (assumes 350* 5/7)
ED	= exposure duration	years	1 year excavation period
ET	= exposure time	hours/day	Air monitoring yields 24 hour averages
CF	= conversion factor	days/hrs	1/24
IUR	= inhalation unit risk	($\mu\text{g}/\text{m}^3$) ⁻¹	USEPA IRIS, IRIS supports and presents route to route extrapolation for oral CSF to an IUR

	CSF ($\text{mg}/\text{kg}\text{-day}$) ⁻¹	BW (kg)	Inhalation Rate (m^3/day)	CF ($\mu\text{g}/\text{mg}$)	IUR ($\mu\text{g}/\text{m}^3$) ⁻¹
Child	2	15	10	1,000	1.3E-03

CSF	= cancer slope factor	($\text{mg}/\text{kg}\text{-day}$) ⁻¹	USEPA 1989
BW	= body weight	kg	DTSC 2014
CF	= conversion factor	$\mu\text{g}/\text{mg}$	1,000
IUR	= inhalation unit risk	($\mu\text{g}/\text{m}^3$) ⁻¹	Calculated

References:

DTSC. 2014. Recommended DTSC Default Exposure Factors for Use in Risk Assessment at California Hazardous Waste Sites and Permitted Facilities. September 30. http://dtsc.ca.gov/AssessingRisk/upload/HHRA_Note1.pdf. California Department of Toxic Substances Control.

USEPA. 1989. Polychlorinated biphenyls (PCBs); CASRN 1336-36-3. Integrated Risk Information System (IRIS). May 1. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0294_summary.pdf. U.S. Environmental Protection Agency.

ATTACHMENT G

CNDDDB SEARCH RESULTS

Table G1. CNDDDB Search Results for San Quentin Quad

Element Type	Scientific Name	Common Name	Federal Status	State Status	CDFW Status	California Rare Plant Rank
Animals - Amphibians	<i>Rana draytonii</i>	California red-legged frog	Threatened	None	SSC	-
Animals - Arachnids	<i>Microcina tiburona</i>	Tiburon micro-blind harvestman	None	None	-	-
Animals - Birds	<i>Melospiza melodia pusillula</i>	Alameda song sparrow	None	None	SSC	-
Animals - Fish	<i>Oncorhynchus tshawytscha</i>	Chinook salmon - Central Valley fall / late fall-run ESU	None	None	SSC	-
Animals - Fish	<i>Oncorhynchus tshawytscha</i>	Chinook salmon - upper Klamath and Trinity Rivers ESU	None	None	SSC	-
Animals - Birds	<i>Accipiter cooperii</i>	Cooper's hawk	None	None	WL	-
Animals - Birds	<i>Ardea alba</i>	Great egret	None	None	-	-
Animals - Birds	<i>Ardea herodias</i>	Great blue heron	None	None	-	-
Animals - Birds	<i>Egretta thula</i>	Snowy egret	None	None	-	-
Animals - Birds	<i>Nycticorax nycticorax</i>	Black-crowned night heron	None	None	-	-
Animals - Birds	<i>Phalacrocorax auritus</i>	Double-crested cormorant	None	None	WL	-
Animals - Birds	<i>Numenius americanus</i>	Long-billed curlew	None	None	WL	-
Animals - Birds	<i>Circus cyaneus</i>	Northern harrier	None	None	SSC	-
Animals - Mammals	<i>Antrozous pallidus</i>	Pallid bat	None	None	SSC	-
Animals - Fish	<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	None	None	SSC	-
Animals - Birds	<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened	FP	-
Animals - Birds	<i>Rallus longirostris obsoletus</i>	California clapper rail	Endangered	Endangered	FP	-
Animals - Birds	<i>Geothlypis trichas sinuosa</i>	Saltmarsh common yellowthroat	None	None	SSC	-
Animals - Mammals	<i>Sorex vagrans halicoetes</i>	Salt-marsh wandering shrew	None	None	SSC	-
Animals - Birds	<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	None	None	SSC	-
Animals - Fish	<i>Hypomesus transpacificus</i>	Delta smelt	Threatened	Endangered	-	-
Animals - Fish	<i>Spirinchus thaleichthys</i>	Longfin smelt	Candidate	Threatened	SSC	-
Animals - Fish	<i>Thaleichthys pacificus</i>	Eulachon	Threatened	None	-	-
Animals - Fish	<i>Oncorhynchus mykiss irideus</i>	Steelhead - central California coast DPS	Threatened	None	-	-
Animals - Mammals	<i>Microtus californicus sanpabloensis</i>	San Pablo vole	None	None	SSC	-
Animals - Fish	<i>Oncorhynchus tshawytscha</i>	Chinook salmon - Central Valley spring-run ESU	Threatened	Threatened	-	-
Animals - Birds	<i>Asio flammeus</i>	Short-eared owl	None	None	SSC	-
Animals - Insects	<i>Bombus caliginosus</i>	Obscure bumble bee	None	None	-	-
Animals - Insects	<i>Bombus occidentalis</i>	Western bumble bee	None	None	-	-
Animals - Insects	<i>Adela oplerella</i>	Opler's longhorn moth	None	None	-	-
Animals - Insects	<i>Danaus plexippus pop. 1</i>	Monarch - California overwintering population	None	None	-	-
Animals - Birds	<i>Melospiza melodia maxillaris</i>	Suisun song sparrow	None	None	SSC	-
Animals - Mammals	<i>Reithrodontomys raviventris</i>	Salt-marsh harvest mouse	Endangered	Endangered	FP	-
Animals - Birds	<i>Chaetura vauxi</i>	Vaux's swift	None	None	SSC	-
Animals - Birds	<i>Elanus leucurus</i>	White-tailed kite	None	None	FP	-
Animals - Mollusks	<i>Tryonia imitator</i>	Mimic tryonia (=California brackishwater snail)	None	None	-	-
Community - Terrestrial	<i>Coastal Terrace Prairie</i>	Coastal Terrace Prairie	None	None	-	-
Community - Terrestrial	<i>Northern Coastal Salt Marsh</i>	Northern Coastal Salt Marsh	None	None	-	-
Community - Terrestrial	<i>Serpentine Bunchgrass</i>	Serpentine Bunchgrass	None	None	-	-
Plants - Vascular	<i>Erythranthe nudata</i>	Bare monkeyflower	None	None	-	4.3
Plants - Vascular	<i>Hesperolinon congestum</i>	Marin western flax	Threatened	Threatened	-	1B.1
Plants - Vascular	<i>Aspidotis carlotta-halliae</i>	Carlotta Hall's lace fern	None	None	-	4.2

Table G1. CNDDDB Search Results for San Quentin Quad

Element Type	Scientific Name	Common Name	Federal Status	State Status	CDFW Status	California Rare Plant Rank
Plants - Vascular	<i>Iris longipetala</i>	Coast iris	None	None	-	4.2
Plants - Vascular	<i>Arabis blepharophylla</i>	Coast rockcress	None	None	-	4.3
Plants - Vascular	<i>Streptanthus glandulosus ssp. niger</i>	Tiburon jewelflower	Endangered	Endangered	-	1B.1
Plants - Bryophytes	<i>Triquetrella californica</i>	Coastal triquetrella	None	None	-	1B.2
Plants - Vascular	<i>Thermopsis macrophylla</i>	Santa Ynez false lupine	None	Rare	-	1B.3
Plants - Vascular	<i>Calochortus tiburonensis</i>	Tiburon mariposa-lily	Threatened	Threatened	-	1B.1
Plants - Vascular	<i>Fritillaria liliacea</i>	Fragrant fritillary	None	None	-	1B.2
Plants - Vascular	<i>Plagiobothrys glaber</i>	Hairless popcornflower	None	None	-	1A
Plants - Vascular	<i>Castilleja affinis var. neglecta</i>	Tiburon paintbrush	Endangered	Threatened	-	1B.2
Plants - Vascular	<i>Castilleja ambigua var. ambigua</i>	Johnny-nip	None	None	-	4.2
Plants - Vascular	<i>Piperia michaelii</i>	Michael's rein orchid	None	None	-	4.2
Plants - Vascular	<i>Trifolium amoenum</i>	Two-fork clover	Endangered	None	-	1B.1
Plants - Vascular	<i>Amorpha californica var. napensis</i>	Napa false indigo	None	None	-	1B.2
Plants - Vascular	<i>Pentachaeta bellidiflora</i>	White-rayed pentachaeta	Endangered	Endangered	-	1B.1
Plants - Vascular	<i>Calochortus umbellatus</i>	Oakland star-tulip	None	None	-	4.2
Plants - Vascular	<i>Chloropyron maritimum ssp. palustre</i>	Point Reyes salty bird's-beak	None	None	-	1B.2
Plants - Vascular	<i>Trifolium hydrophilum</i>	Saline clover	None	None	-	1B.2
Plants - Vascular	<i>Collomia diversifolia</i>	Serpentine collomia	None	None	-	4.3
Plants - Vascular	<i>Calamagrostis ophitidis</i>	Serpentine reed grass	None	None	-	4.3
Plants - Vascular	<i>Symphyotrichum lentum</i>	Suisun Marsh aster	None	None	-	1B.2
Plants - Vascular	<i>Eriogonum luteolum var. caninum</i>	Tiburon buckwheat	None	None	-	1B.2

Notes:

CNDDDB search completed in January 4, 2017.

For ranking and field codes, see: https://map.dfg.ca.gov/rarefind/view/RF_FieldDescriptions.htm

- = not applicable

CDFW = California Department of Fish and Wildlife

CNDDDB = California Natural Diversity Database

DPS = distinct population segment

ESU = evolutionarily significant unit

FP = CDFW Fully Protected Species

SSC = CDFW Species of Special Concern

WL = CDFW Watch List Species

Table G2. CNDDDB Search Results for San Rafael Quad

Element Type	Scientific Name	Common Name	Federal Status	State Status	CDFW Status	California Rare Plant Rank
Animals - Birds	<i>Pelecanus occidentalis californicus</i>	California brown pelican	Delisted	Delisted	FP	-
Animals - Amphibians	<i>Dicamptodon ensatus</i>	California giant salamander	None	None	SSC	-
Animals - Birds	<i>Strix occidentalis occidentalis</i>	California spotted owl	None	None	SSC	-
Animals - Birds	<i>Haliaeetus leucocephalus</i>	Bald eagle	Delisted	Endangered	FP	-
Animals - Amphibians	<i>Rana boylei</i>	Foothill yellow-legged frog	None	None	SSC	-
Animals - Birds	<i>Ardea alba</i>	Great egret	None	None	-	-
Animals - Birds	<i>Ardea herodias</i>	Great blue heron	None	None	-	-
Animals - Birds	<i>Egretta thula</i>	Snowy egret	None	None	-	-
Animals - Birds	<i>Nycticorax nycticorax</i>	Black-crowned night heron	None	None	-	-
Animals - Birds	<i>Circus cyaneus</i>	Northern harrier	None	None	SSC	-
Animals - Birds	<i>Pandion haliaetus</i>	Osprey	None	None	WL	-
Animals - Mammals	<i>Antrozous pallidus</i>	Pallid bat	None	None	SSC	-
Animals - Birds	<i>Laterallus jamaicensis coturniculus</i>	California black rail	None	Threatened	FP	-
Animals - Birds	<i>Rallus longirostris obsoletus</i>	California clapper rail	Endangered	Endangered	FP	-
Animals - Birds	<i>Strix occidentalis caurina</i>	Northern spotted owl	Threatened	Threatened	SSC	-
Animals - Birds	<i>Geothlypis trichas sinuosa</i>	Saltmarsh common yellowthroat	None	None	SSC	-
Animals - Fish	<i>Eucyclogobius newberryi</i>	Tidewater goby	Endangered	None	SSC	-
Animals - Fish	<i>Spirinchus thaleichthys</i>	Longfin smelt	Candidate	Threatened	SSC	-
Animals - Fish	<i>Oncorhynchus kisutch</i>	Coho salmon - central California coast ESU	Endangered	Endangered	-	-
Animals - Fish	<i>Oncorhynchus mykiss irideus</i>	Steelhead - central California coast DPS	Threatened	None	-	-
Animals - Insects	<i>Bombus caliginosus</i>	Obscure bumble bee	None	None	-	-
Animals - Insects	<i>Bombus occidentalis</i>	Western bumble bee	None	None	-	-
Animals - Insects	<i>Adela oplerella</i>	Opler's longhorn moth	None	None	-	-
Animals - Insects	<i>Callophrys mossii bayensis</i>	San Bruno elfin butterfly	Endangered	None	-	-
Animals - Insects	<i>Trachusa gummifera</i>	San Francisco Bay Area leaf-cutter bee	None	None	-	-
Animals - Mammals	<i>Reithrodontomys raviventris</i>	Salt-marsh harvest mouse	Endangered	Endangered	FP	-
Animals - Birds	<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	None	None	SSC	-
Animals - Mammals	<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	SSC	-
Animals - Mammals	<i>Lasionycteris noctivagans</i>	Silver-haired bat	None	None	-	-
Animals - Reptiles	<i>Emys marmorata</i>	Western pond turtle	None	None	SSC	-
Animals - Mammals	<i>Lasiurus cinereus</i>	Hoary bat	None	None	-	-
Animals - Mammals	<i>Myotis thysanodes</i>	Fringed myotis	None	None	-	-
Animals - Mammals	<i>Myotis yumanensis</i>	Yuma myotis	None	None	-	-
Animals - Mollusks	<i>Tryonia imitator</i>	Mimic tryonia (=California brackishwater snail)	None	None	-	-
Animals - Mollusks	<i>Vespericola marinensis</i>	Marin hesperian	None	None	-	-
Animals - Mollusks	<i>Pomatiopsis binneyi</i>	Robust walker	None	None	-	-
Animals - Mammals	<i>Lasiurus blossevillii</i>	Western red bat	None	None	SSC	-
Community - Terrestrial	<i>Coastal Brackish Marsh</i>	Coastal Brackish Marsh	None	None	-	-
Community - Terrestrial	<i>Coastal Terrace Prairie</i>	Coastal Terrace Prairie	None	None	-	-
Community - Terrestrial	<i>Northern Coastal Salt Marsh</i>	Northern Coastal Salt Marsh	None	None	-	-
Community - Terrestrial	<i>Serpentine Bunchgrass</i>	Serpentine Bunchgrass	None	None	-	-
Plants - Vascular	<i>Calandrinia breweri</i>	Brewer's calandrinia	None	None	-	4.2
Plants - Vascular	<i>Astragalus breweri</i>	Brewer's milk-vetch	None	None	-	4.2
Plants - Vascular	<i>Leptosiphon acicularis</i>	Bristly leptosiphon	None	None	-	4.2
Plants - Vascular	<i>Elymus californicus</i>	California bottle-brush grass	None	None	-	4.3

Table G2. CNDDDB Search Results for San Rafael Quad

Element Type	Scientific Name	Common Name	Federal Status	State Status	CDFW Status	California Rare Plant Rank
Plants - Vascular	<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	California Gairdner's yampah	None	None	-	4.2
Plants - Vascular	<i>Holocarpha macradenia</i>	Santa Cruz tarplant	Threatened	Endangered	-	1B.1
Plants - Vascular	<i>Cypripedium californicum</i>	California lady's-slipper	None	None	-	4.2
Plants - Vascular	<i>Aspidotis carlotta-halliae</i>	Carlotta Hall's lace fern	None	None	-	4.2
Plants - Vascular	<i>Pentachaeta bellidiflora</i>	white-rayed pentachaeta	Endangered	Endangered	-	1B.1
Plants - Vascular	<i>Arabis blepharophylla</i>	Coast rockcress	None	None	-	4.3
Plants - Vascular	<i>Hemizonia congesta</i> ssp. <i>congesta</i>	Congested-headed hayfield tarplant	None	None	-	1B.2
Plants - Vascular	<i>Gilia millefoliata</i>	Dark-eyed gilia	None	None	-	1B.2
Plants - Vascular	<i>Helianthella castanea</i>	Diablo helianthella	None	None	-	1B.2
Plants - Vascular	<i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	Glory brush	None	None	-	4.3
Plants - Vascular	<i>Plagiobothrys glaber</i>	Hairless popcornflower	None	None	-	1A
Plants - Vascular	<i>Hosackia gracilis</i>	Harlequin lotus	None	None	-	4.2
Plants - Vascular	<i>Castilleja ambigua</i> var. <i>ambigua</i>	Johnny-nip	None	None	-	4.2
Plants - Vascular	<i>Ceanothus pinetorum</i>	Kern ceanothus	None	None	-	4.3
Plants - Vascular	<i>Leptosiphon grandiflorus</i>	Large-flowered leptosiphon	None	None	-	4.2
Plants - Vascular	<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	None	None	-	4.2
Plants - Vascular	<i>Trifolium amoenum</i>	Two-fork clover	Endangered	None	-	1B.1
Plants - Vascular	<i>Fritillaria lanceolata</i> var. <i>tristulis</i>	Marin checker lily	None	None	-	1B.1
Plants - Vascular	<i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	Marin checkerbloom	None	None	-	1B.1
Plants - Vascular	<i>Navarretia rosulata</i>	Marin County navarretia	None	None	-	1B.2
Plants - Vascular	<i>Polygonum marinense</i>	Marin knotweed	None	None	-	3.1
Plants - Vascular	<i>Hesperolinon congestum</i>	Marin western flax	Threatened	Threatened	-	1B.1
Plants - Vascular	<i>Arctostaphylos virgata</i>	Marin manzanita	None	None	-	1B.2
Plants - Vascular	<i>Microseris paludosa</i>	Marsh microseris	None	None	-	1B.2
Plants - Vascular	<i>Toxicoscordion fontanum</i>	Marsh zigadenus	None	None	-	4.2
Plants - Bryophytes	<i>Fissidens pauperculus</i>	Minute pocket moss	None	None	-	1B.2
Plants - Vascular	<i>Ceanothus rigidus</i>	Monterey ceanothus	None	None	-	4.2
Plants - Vascular	<i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>	Mt. Tamalpais bristly jewelflower	None	None	-	1B.2
Plants - Vascular	<i>Arctostaphylos montana</i> ssp. <i>montana</i>	Mt. Tamalpais manzanita	None	None	-	1B.3
Plants - Vascular	<i>Cirsium hydrophilum</i> var. <i>vaseyi</i>	Mt. Tamalpais thistle	None	None	-	1B.2
Plants - Vascular	<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	None	None	-	1B.2
Plants - Vascular	<i>Calochortus umbellatus</i>	Oakland star-tulip	None	None	-	4.2
Plants - Vascular	<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Point Reyes checkerbloom	None	None	-	1B.2
Plants - Vascular	<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	None	None	-	1B.2
Plants - Vascular	<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	None	Threatened	-	1B.1
Plants - Vascular	<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	San Francisco Bay spineflower	None	None	-	1B.2
Plants - Vascular	<i>Erysimum franciscanum</i>	San Francisco wallflower	None	None	-	4.2
Plants - Vascular	<i>Stebbinsoseris decipiens</i>	Santa Cruz microseris	None	None	-	1B.2
Plants - Vascular	<i>Cistanthe maritima</i>	Seaside cistanthe	None	None	-	4.2
Plants - Vascular	<i>Calamagrostis ophitidis</i>	Serpentine reed grass	None	None	-	4.3
Plants - Vascular	<i>Kopsiopsis hookeri</i>	Small groundcone	None	None	-	2B.3
Plants - Vascular	<i>Juncus acutus</i> ssp. <i>leopoldii</i>	Southwestern spiny rush	None	None	-	4.2
Plants - Vascular	<i>Streptanthus batrachopus</i>	Tamalpais jewelflower	None	None	-	1B.3
Plants - Vascular	<i>Lessingia micradenia</i> var. <i>micradenia</i>	Tamalpais lessingia	None	None	-	1B.2
Plants - Vascular	<i>Quercus parvula</i> var. <i>tamalpaisensis</i>	Tamalpais oak	None	None	-	1B.3

Table G2. CNDDDB Search Results for San Rafael Quad

Element Type	Scientific Name	Common Name	Federal Status	State Status	CDFW Status	California Rare Plant Rank
Plants - Vascular	<i>Horkelia tenuiloba</i>	Thin-lobed horkelia	None	None	-	1B.2
Plants - Vascular	<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	None	None	-	2B.1
Plants - Vascular	<i>Eriogonum luteolum var. caninum</i>	Tiburon buckwheat	None	None	-	1B.2

Notes:

CNDDDB search completed in January 4, 2017.

For ranking and field codes, see: https://map.dfg.ca.gov/rarefind/view/RF_FieldDescriptions.htm

- = not applicable

CDFW = California Department of Fish and Wildlife

CNDDDB = California Natural Diversity Database

DPS = distinct population segment

ESU = evolutionarily significant unit

FP = CDFW Fully Protected Species

SSC = CDFW Species of Special Concern

WL = CDFW Watch List Species

ATTACHMENT H

RESPONSES TO COMMENTS ON
THE INITIAL STUDY/MITIGATED
NEGATIVE DECLARATIONS FOR
2000 LARKSPUR LANDING CIRCLE

RESPONSES TO COMMENTS ON THE INITIAL STUDY/ MITIGATED NEGATIVE DECLARATIONS FOR 2000 LARKSPUR LANDING CIRCLE

RESPONSE TO COMMENTS FROM CALTRANS (DATED MAY 12, 2017)

1. Lead Agency

As the Lead Agency, Sanitation District No. 1 of Marin County is responsible for all project mitigation, including any needed improvements to the STN. Mitigation, financing, scheduling, implementation responsibilities and monitoring should be fully discussed for all proposed mitigation measures, prior to the submittal of an encroachment permit.

Response

Comment noted. Lead agency responsibilities are correct. No encroachment permits are anticipated to be necessary and no needed improvements to the STN are anticipated for this project.

2. Access Operations

Please condition the project to require the dump trucks to travel to and from the site in the off-peak hours and select travel route in the off-peak direction. Please specify the early morning hours the dump trucks would travel through the STN. Peak traffic on US 101 occurs between 6:30-8:30 AM and 4:30-7:00 PM.

Response

Ultimately, routes and timing for trucks entering and leaving the site will be developed by the contractor, who will be required to provide a transportation management plan. (This provision, which is a routinely required contractor submittal, has been added to the Initial Study.) However, the nature of the project is such that dump trucks off-hauling materials will not be traveling to and from the site in the late afternoon (landfills typically will not accept dump trucks past mid-afternoon); therefore, no travel by dump trucks is anticipated between 4:30 and 7:00 p.m. However, off-haul trucks will need to enter the site between 6:30 and 8:30 a.m. A few trucks can stage onsite prior to 6:30 a.m., but the site does not have the capacity for 20 trucks to stage. A small number of trucks (likely a maximum of 10) will need to travel to the site between 6:30 and 8:30 a.m.; this small number of trucks will have no material impact on the traffic on U.S. 101. Backfill materials are likely to be

transported to the site in off-peak hours (after trucks off-hauling material leave the site), and are also unlikely to arrive onsite after 4:30 p.m.

Additionally, it is not anticipated that trucks would utilize U.S. 101, as all of the landfills that can accept the type of waste from this project are located in the East Bay or Central Valley. Thus, trucks are most likely to take Sir Francis Drake Boulevard east to Highway 580. The source of the backfill material is not known at this time (to be determined by the contractor), but may also originate in the East Bay.

This information has been added to the Initial Study.

3. Transportation Permit

Project work that requires movement of oversized or excessive load vehicles on STN requires a transportation permit that is issued by Caltrans. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to: Caltrans Transportation Permits Office, 1823 14th Street, Sacramento, CA 95811-7119. See the following website for more information: <http://www.dot.ca.gov/hq/traffops/permits>.

Response

Comment noted. The use of oversized or excessive load vehicles is not anticipated for this project. If such vehicles are required, the contractor will be instructed to comply with the Caltrans Transportation Permit process. This information has been added to the Initial Study.

RESPONSE TO COMMENTS FROM CITY OF LARKSPUR (DATED MAY 15, 2017)

1. Other Permits and Project Approvals

Being well in excess of 1,000 cubic yards (CY) of excavation, the project will be subject to Grading Permit review by the Larkspur Planning Commission per Larkspur Municipal Code 15.20.120 (*Review and Consideration of Large Scale Plans*). This is a discretionary process and should be referenced on page 8 and differentiated from the administrative Grading and Hauling Permit.

Response

The District understands that the grading permit issuance for this project will be a discretionary process; the Initial Study has been revised to clearly state that this is different from the administrative Grading and Hauling Permit.

2. References

The Initial Study references a document titled *Updated Application for Cleanup of Polychlorinated Biphenyls* (Kennedy Jenks, Inc. 2017). This document contains studies and construction/cleanup management programs that are pertinent to the analysis. While we were able to obtain a copy by request, we note that the document is still not available on your website page, which contains just about all other materials relevant to the project site. Should you decide to revise and re-circulate the Initial Study for further review in response to these and/or other comments, we suggest that you make this document readily available to the public via your website, to assure compliance with best practices for public agencies conducting environmental review.

Response

The *Updated Application for Cleanup of Polychlorinated Biphenyls* (Kennedy Jenks, Inc. 2017), is still in review by the U.S. Environmental Protection Agency (EPA). To aid the reader, relevant excerpts from the application have been provided either within the text or as an attachment to the Initial Study. The final document will be made available to the public after concurrence from EPA prior to any construction activity. Also see response to Comment 8.

3. Risk Assessment for Removing PCB-contaminated Soils from the Site

The project involves the excavation and removal of approximately 40,000 CY (60,000 tons) of contaminated soil, over about a six month period. Expected construction equipment includes up to 2 excavators, up to 2 front-end loaders, and a dozer for up to 11 hours per day, in addition to haul trucks for export and import of soil.

There is a preschool (children 2 - 5 years of age) about 350 feet northwest from the center of the 2- acre excavation area, as well as a rental complex for low-income families about the same distance to the east from the center of the excavation area.

PCBs are a hazardous substance. The *principal potential impact* of the proposed project is the exposure of sensitive receptors to PCB residues in site soils and dust generated by site excavation. The IS does not provide a sufficient analysis of this principal potential project impact as health risks were not adequately evaluated. There was a quasi-quantitative screening type evaluation for PCBs that was used to conclude that PCBs would not have a significant health risk. This analysis makes some sense, but it does not demonstrate that there would be no impacts. It should be noted that the screening level PCB concentration threshold that was used was an EPA value for residential exposures, and we doubt that it is consistent with BMQMD/OSHA methods since it does not appear to account for the greater sensitivity of children. Also, potential health risks from construction equipment/trucks DPM emissions were not evaluated.

Criteria pollutant emissions were calculated with CalEEMod, the details of which are unknown since specific assumptions or the CalEEMod output were not provided. It is unclear which version of CalEEMod was used since the text references CAPCOA 2013, which would be the reference for the earlier version of the model, not the current one. The unmitigated/mitigated PM emissions were listed as 1.55/0.77 tons for PM10 and 0.86/0.44 for PM2.5. At these levels potential health impacts from DPM and PM2.5 should probably be evaluated. BMQMD cancer risk/PM2.5 thresholds were not identified in the text and impacts from DPM were not even qualitatively addressed. It should be noted that the cancer potency of PCBs is about twice that of DPM, so even small emissions of PCBs could be significant. Even though the remediation would only occur for about 6 months, a quantitative health risk evaluation should be prepared to evaluate potential health impacts from DPM and PCB emissions due the proximity of the preschool and residences, and to the increased sensitivity of children to toxic air contaminants.

Health risk should be evaluated via health risk methods, rather than the approach used in the IS. The results could ultimately be less than significant, but the IS needs to show the credible evidence. Also, Marin County has a lack of meteorological data, so any health risk

might have to rely on screening meteorological data that could result in high concentrations.

Response

Health Risks of PCBs

Potential health risk from exposure to PCBs in dust that could be generated during construction activities was evaluated using appropriate risk assessment methods. For remedial construction projects, dust must be managed to remain below specific trigger or action levels, as described in the Initial Study; if elevated dust concentrations are detected during dust monitoring at the site boundary, work stops and additional dust control measures are implemented. Therefore, risks are evaluated at the trigger or action levels as a maximum exposure case. Exposure concentrations of PCBs in dust at those maximum levels were estimated using site soil data and compared with available and conservative risk-based air concentrations—this is a typical risk assessment method. The EPA ambient air regional screening level (RSL) used in this evaluation is a risk-based concentration protective of residents and is considered conservative because it is based on an exposure duration of 26 years (USEPA 2016), whereas the project construction activity is less than 1 year (approximately 8 months). Additional details on this calculation have been provided in the Initial Study.

EPA does not provide ambient air RSLs specifically aimed at protecting children. The Initial Study has been revised to include both 1) a description of the dust monitoring program; and 2) an assessment of potential risks to children from exposure to PCBs in dust using a site-specific risk-based screening level (RBSL) calculated assuming a 1-year construction period (with a frequency of 5 days/week) as presented below (highlighted in yellow). The estimated PCB concentrations in dust are well below the site-specific RBSL for children and, therefore, no unacceptable risks to children are expected during construction activities at the project site. Note, the ambient air EPA RSL for adult residents is more conservative than the site-specific RBSL for children and, therefore, would be protective of children as well, as originally assumed in the Initial Study.

Range of PCB Concentrations in Dust at the Trigger and Action Level

Parameter	Unit	Average (reasonable)		Maximum (worst case)	
		Trigger Level	Action Level	Trigger Level	Action Level
Estimated PCB Concentration in Dust	µg/m ³	4.65E-04	1.4E-04	3.65E-03	1.10E-02
EPA Ambient Air	µg/m ³	4.9E-03	4.9E-03	4.9E-03	4.9E-03

Range of PCB Concentrations in Dust at the Trigger and Action Level

Parameter	Unit	Average (reasonable)		Maximum (worst case)	
		Trigger Level	Action Level	Trigger Level	Action Level
Regional Screening Level					
Exceeds Threshold?		No	No	No	Yes
Site-Specific Risk-Based Screening Level Protective of Children		7.7E-02	7.7E-02	7.7E-02	7.7E-02
Exceeds Threshold?		No	No	No	No

CalEEModel

Pollutant emissions for the project were estimated using CalEEMod Version: CalEEMod.2016.3.1 (CAPCOA 2016). The correct reference and outputs of the model are provided in the revised Initial Study.

Diesel Particulate Matter (DPM)

The BAAQMD guidance (2017) reports that construction-related activities could result in the generation of toxic air contaminants (TACs), specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. The generation of TAC emissions in most cases is temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors (children) to substantial concentrations. Studies have shown concentrations of mobile-source DPM emissions reduce dramatically with distance from the road, primarily in the first 100–150 m (CARB 2005). The BAAQMD screening guidance (2010)), which lays out a qualitative framework for assessing risks from DPM, reports that for a project area of 2 acres, the minimum offset distance from the project fence line to ensure that a sensitive receptor would have a less than significant impact is 100 m. Although the daycare is on the north side of the site, about 50 m from the edge of the planned excavation area, the trucks will be staged mainly in the southern part of the site, which is more than 100 m away from the day care. There is a retaining wall physically separating the daycare and nearby residents from the site, minimizing some of the emissions going offsite. This project is considered small in size (less than 2 acres) with a low volume of trucks (maximum of 40 trucks) entering and exiting the site per day. Therefore, the incremental DPM exposures to nearby residents is minimal (compared to DPM from regular traffic on Larkspur Landing Circle and St. Francis Drake Boulevard) and not significant. In addition, to reduce DPM

exhaust emissions, the Basic Construction Mitigation Measures (Tables 8-2 and 8-3 of the BAAMQD 2017) will be implemented during construction. These measures include minimizing idling times while onsite. The majority of the diesel emissions estimated for this project will actually occur during transportation of materials to and from the site (i.e., offsite).

Health risks from DPM exposures during construction were not quantitatively evaluated 1) because of the qualitative factors discussed above; and 2) because current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary (in this case about 6–8 months) and highly variable nature of construction activities. The OEHHA provides only a chronic reference exposure level (REL) for diesel exhaust and not an acute or subchronic REL; this results in difficulties with producing accurate estimates of health risk for short-term construction activities.

The BAAQMD guidance (2017) recommends characterizing potential health effects from exposure directly to PM_{2.5} exhaust through comparison to the threshold of significance. The amount of onsite diesel-generated PM_{2.5} exhaust (assuming that all onsite diesel PM_{2.5} exhaust is diesel PM) for this project is estimated to be 0.085 ton/year (for mitigated and unmitigated construction). The estimated PM_{2.5} exhaust emissions are several orders of magnitude below the BAAMQD threshold of 10 tons/year. As a comparison, the San Luis Obispo Air Pollution Control District (SLO County APCD 2012) provides a threshold of significance specifically for DPM and construction activities of 0.13 ton/quarter for projects lasting over one quarter based on the California Health & Safety Code and the CARB Carl Moyer Guidelines; the PM_{2.5} exhaust emissions for the remediation project are estimated to be significantly below this threshold as well.

Based on the above information, health effects from DPM exposure are considered to be less than significant. This discussion will be included in the revised Initial Study.

4. Clarification of Traffic Impacts

The IS traffic analysis is basically a qualitative analysis that finds no significant impact based on the consideration that the number of trips generated is small compared to the large traffic volumes on Sir Francis Drake Boulevard (SFD). Because the project is short-term, it is accurate that it will not have a long-term impact on roadway conditions or intersection levels of service. However, certain short-term impacts could be sufficiently severe as to warrant traffic control mitigations for the project. Given the well-documented existing peak hour traffic congestion on SFD between Highway 101 and Highway 580, a more rigorous traffic assessment is warranted to determine whether mitigation measures are required during project excavation and filling. The traffic analysis should be revised/expanded to include the following [*see bullets below for the remainder of comment*]:

Response

Responses to specific City comments are provided below.

- The Project Description assumes excavation and filling can occur on Saturday. However, the Larkspur grading ordinance allows grading only on Monday to Friday. Given this, the project schedule should be revised, and the analyses of traffic (and other) impacts should be adjusted accordingly.
 - **Response:** The District understands that Larkspur Municipal Code Title 15, Chapter 20 indicates that grading can only occur Monday through Friday, excluding holidays, and from 7 a.m. to 6 p.m. The only exception to this rule is “when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in progress be continued until a specific phase is completed.” This information has been added to the Initial Study.
- Describe the proposed traffic split (distribution to the east and west for am and pm peak hours) and provide information about when am and pm peak time periods are for this roadway section.
 - **Response:** Ultimately, truck routes will be developed by the contractor, who will be required to provide a Transportation Plan. (This provision, which is a routinely required contractor submittal as well as a requirement for the grading and hauling permit, has been added to the Initial Study). It is not anticipated that trucks would utilize U.S. 101, as all of the landfills that can accept the type of waste from this project are located in the East Bay or Central Valley. Thus, trucks are most likely to take Sir Francis Drake Boulevard to and from the east to Highway 580. The source of the backfill material is not known at this time (to be determined by the contractor), but may also originate in the East Bay. Information on peak time periods and the expected flow of truck traffic to and from the site has been added to the Initial Study.
- Work with the City to provide data on current LOS for affected intersections. The information provided in the IS is based on counts that are 7+ years old, and counts over three years old are typically not considered adequate by Caltrans for CEQA purposes.
 - **Response:** The Initial Study utilized and referenced LOS data and counts from the following studies: *Traffic Impact Assessment and Parking Report for 2000 Larkspur Landing Circle* prepared by Dowling Associates, Inc. (2003) for Campus Cornerstone Larkspur, L.L.C.; and *SMART Station Area Plan Environmental Impact Report* prepared by the City of Larkspur (2014) using data from 2011. The counts from the two studies were similar. Newer information on LOS and counts was not publicly available. (The Larkspur General Plan contains counts

from 2003.) The Transportation Authority of Marin (TAM) recently contracted with Parisi Transportation Consulting (Curt Harrington, personal communication on June 7, 2016) to conduct additional traffic counts in the Larkspur Landing area. The recent counts were conducted in October 2016 and showed an increase in traffic in the vicinity of the project site. At the eastern intersection of Larkspur Landing Circle and Sir Francis Drake Blvd, which is the one that trucks will be required to utilize, counts increased by 55 to 67% during the morning peak traffic hours and 68 to 100% during the peak afternoon traffic hours with over 3000 trips in the morning and over 4000 in the afternoon.

- Provide a description of traffic generation. Haul truck trips for double trailers should be calculated as equivalent to 3.0 passenger vehicle trips (PCE) (consistent with trip generation analyses done for quarry projects). Provide clarification of trip generation as to whether the analysis in the IS counts each truck entering and leaving the site as two trips (actually 6 trips when converted using the PCE of 3.0). We estimate that the schedule and volumes proposed would require up to 160 truck trips per day (40 disposal trucks entering site + 40 leaving + 40 fill trucks entering + 40 leaving), adjusted for eliminating Saturdays from the schedule. Using the PCE of 3.0, this is the equivalent of 480 vehicle trips per day plus the additional trips generated by workers and supply vehicles.
 - **Response:** The total trips calculated by the City above are not correct. Double trailer trucks are not used for hauling soils to landfills and are also not anticipated for the delivery of backfill material. The 25-ton dump trucks listed in the Initial Study will be single trailer trucks. Also, the total of 40 trucks per day stated in the Initial Study is correct, with 20 off-hauling material and 20 bringing backfill to the site. If the round trips are considered, this would result in 80 trips (40 round trips) to the site each day. This is likely a conservative estimate, as the backfill delivery may coincide with the offhauling to some degree (i.e., a truck delivering backfill would be loaded with soil for offhaul to a landfill, thereby combining two trips into one). Only a small number of workers will be required for this project (likely in the range of 6–10), so the trips due to worker travel are minimal and likely off-peak (workers arriving by 6:30 a.m. and leaving at 6 p.m. or later). The Initial Study has been revised to clarify this information.
- Confer with the City about potential impacts from haul trucks on peak period traffic and whether traffic controls (i.e., limits on times when trucks can access the site from certain directions) are needed to avoid significant congestion impacts. For example, it may be necessary to limit eastbound truck traffic during the afternoon period when the commute traffic drops the roadway operations to LOS F conditions. Adjustments to the anticipated schedule should anticipate restrictions on hauling times during peak commute periods.

- **Response:** The nature of the project is such that dump trucks off-hauling materials will not be traveling to and from the site in the late afternoon (landfills typically will not take dump trucks past mid-afternoon); therefore, no travel by dump trucks is anticipated between 4:30 and 7:00 p.m. However, off-haul trucks will need to enter the site between 6:30 and 8:30 a.m. A few trucks can stage onsite prior to 6:30 a.m., but the site does not have the capacity for 20 trucks to stage. A small number of trucks (likely a maximum of 10) will need to travel to the site between 6:30 and 8:30 a.m.; this small volume of trucks will have no material impact on the traffic on U.S. 101. Backfill materials are likely to be transported to the site during off-peak hours (after trucks off-hauling material leave the site) and are also unlikely to arrive onsite after 4:30 p.m.

As stated above, the contractor will be required to prepare a Transportation Plan. One goal of the plan will be to minimize impacts to local traffic to the extent feasible. However, as found in the Initial Study, the number of truck trips (anticipated to be approximately 40 round trips, or 80 trips per day, largely during non-peak hours) will have a less than significant impact. Throughput on the site will be limited by the speed of the excavation and backfilling activities and limited space for staging onsite. The number of trucks per hour on Sir Francis Drake Boulevard is expected to be 10 or less, compared to over 1,000 vehicles estimated over an hour during peak traffic hours in the 2006 study. This increase in traffic is insignificant. Further discussion has been added to the Initial Study to clarify these points.

5. Water Quality

Under the discussion of Item 9b, the IS mentions the potential need to dewater areas where groundwater is encountered. There is no discussion of whether such groundwater may be contaminated with PCB and where and how such water would be disposed of if it is contaminated. We note that Section 5.4.2 (p. 33) of the report for the Updated Application for Cleanup (Kennedy Jenks, Inc. 2017) addresses the issue of water coming into contact with polluted soils.

This management approach should be referenced in the IS as it does not address this issue in any other manner. Further, the referenced Updated Application should be made available to view on your website (see item No. 2 above).

Response

Information from Section 5.4.2 (p. 33) of the Updated Application for Cleanup report (Kennedy Jenks, Inc. 2017; see excerpt below) addressing the issue of water coming into contact with polluted soils will be included in Item 9b of the Initial Study. Please see

response to Comment 2 with regards to availability of the Kennedy Jenks, Inc. (2017) document.

Incidental water management may be required depending on precipitation and the depth of soil and debris removal operations. Water coming into contact with debris and contaminated soil may be extracted to the extent necessary to perform the work and containerized (in tanks or drums) for chemical analysis prior to discharge. Water will be managed in accordance with applicable regulations, health and safety requirements, and the applicable procedures described in this Application. Dewatering water containing chemical concentrations exceeding applicable discharge limits may require pre-treatment to reduce contaminant concentration to comply with discharge limits. If pre-treatment is infeasible, then dewatering water will be collected into DOT-approved containers for offsite transport and disposal at an appropriate facility.

6. Greenhouse Gas Emission Analysis

The GHG analysis uses an incorrect significance threshold. There is no BAAQMD threshold for GHG construction emissions. Instead, the BAAQMD CEQA Guidelines state that each lead agency should determine the significance of project construction GHG emissions in relation to meeting AB 32 GHG reduction goals. The IS does not provide that analysis, instead relying on a significance threshold that does not apply to construction emissions. Though it is expected that the impact would remain less than significant as reported in the IS, some additional analysis is needed to adequately comply with CEQA requirements. If it is of assistance, the Larkspur Climate Action Plan and our 2005 - 2014 GHG inventories can be viewed on the Marin Climate and Energy Partnership website here: <http://www.marinclimate.org/>

Response

It is correct that the BAAQMD (2017) does not have an adopted Threshold of Significance for construction-related GHG emissions. However, based on the small scale of this construction project, the Sanitary District No. 1 of Marin County (the lead agency) estimated that the maximum annual emissions (337 MT/year) that could be generated during construction are approximately one-third of the BAAQMD's Threshold of Significance for operations-related GHG emissions of 1,100 MT/year. As a comparison, the Sacramento Metropolitan Air Quality Management District (SMAQMD 2015) Threshold of Significance for construction-related GHG emissions (1,100 MT/year). The Marin Climate and Energy Partnership web site has been reviewed, but also contains no thresholds of significance. The estimated GHG emissions for the City of Larkspur in 2014 were over

71,000 MT, with approximately half of this attributed to transportation; the 337 MT estimated for this project, which are largely attributed to transportation, comprise approximately 1 percent of the transportation emissions for the City of Larkspur. This level of increase is less than significant. Further discussion has been added to the Initial Study to clarify these points.

In accordance with the BAAQMD guidelines (BAAQMD 2017), best management practices listed in the Initial Study under Item 7 will be used to reduce GHG emissions at the project site during construction. The Initial Study indicated that the contractor bid and specifications will list and encourage the contractor to employ best management practices, where feasible, to reduce GHG emissions.

7. Clarification Regarding Mitigation Measures Incorporated into the Project

The Project Description notes that many management plans will be developed as part of the "Site Preparation" phase of the project. These various management plans are later referenced in the impact discussions as plans that would mitigate potential impacts. This includes the health and safety plan (HASP), dust control plan, SWPPP, emergency response, etc. It is accurate that such plans are required by pertinent regulatory agencies and/or the City. However, to ensure that potential IS reviewers understand how actual mitigation will occur, it is important to clarify the specific regulatory requirements for each plan and how these plans (that have not yet been developed or described in the IS) will require project compliance with basic performance standards. In several impact discussions, it would be clearer to state: 1) what the potential impact is; 2) whether the impact is reduced to a less-than-significant level by actions included as part of the project proposal and specifically what those actions are; 3) what performance standards will be required for the mitigation plan that will be developed; and 4) what that plan will be and whether it will, in fact, mitigate the potential impact.

For example, pp. 5-6 of the IS describes regrading, backfilling, and erosion control methods, but it does not provide clarifying language in the Project Description (or refer to a supporting technical report) that states what performance standards will be met during these activities. As another example, the analysis under Item 9a (Hydrology) states that the SWPPP and hazardous materials handling measures will ensure that PCBs from the site do not enter the Bay. However, performance standards for these measures and plan are not listed; the linkage between plan and measures and impact reduction are not clear. This issue can be easily remedied without requiring new impact analysis.

Response

The Initial Study references several management plans that will be developed as part of the site preparation phase, including the Health and Safety Plan (HASP), Disposal Operations

and Transportation Plan, Decontamination Plan, Dust Control Plan, and Stormwater Pollution Prevention Plan (SWPPP). To ensure that potential Initial Study reviewers understand how management measures will result in less than significant impacts, a description of the specific regulatory requirements for each plan, as well as an explanation as to how these plans ensure compliance with basic performance standards, has been included as an attachment to the Initial Study.

8. Mandatory Findings of Significance

The IS Findings should be revised to reflect any additional clarifications or analyses done to respond to issues raised above.

Response

The District has revised the IS/MND to address all comments received, as appropriate. None of the requested changes/analyses are significant or identify new impacts. As such, the revised IS/MND does not require recirculation. The responses to comments have been documented in a staff report and the final IS/MND has been posted to the District's web site.

RESPONSE TO COMMENTS FROM THE FEDERATED INDIANS OF GRATON RANCHERIA (FIGR; DATED MAY 12 2017)

Comment 1

The archaeological report should document the outcome of the unearthing of the Native American burials which the Tribe believes are Coast Miwok ancestors and in present day protected by the Federated Indians of Graton Rancheria, specifically the Tribe's Most Likely Descendant, Gene Buvelot.

Response

The District recognizes that the prior archaeological reports were prepared prior to enactment of Assembly Bill No. 52 (AB 52), which established a new category of resources under CEQA called "tribal cultural resources" that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation. The Initial Study has been revised to clarify this point.

Comment 2

The IS/MND inaccurately identifies the cultural items unearthed by the previous project as "prehistoric artifacts." These are identified by the tribe as burial items that at some point during ground disturbing activities were displaced from burials.

Response

See response to Comment 1 above. The IS/MND was revised to indicate that burial items and tribal cultural resources have been identified on the project site.

Comment 3

The extent of tribal cultural resources is vastly spread within the project area and past projects may not prove to be accurate in the depth of where TCR's may now exist. The Tribe requested archaeological monitoring of this area with the expectation that this is coordinated with the Tribe throughout the process and inclusive of a tribal monitor working with a tribally preferred archaeologist or one in which the Tribe has not had conflict with for misidentification and disrespectful treatment of TCR's.

Response

The District will coordinate with the Tribe prior to and throughout the project implementation, including selection of a project archaeologist. Mitigation Measure Cul2

has been modified to specify coordination with the Tribe prior to and throughout the project implementation, including selection of a project archaeologist.

Comment 4

A Tribal Treatment Plan is proposed for this project at the time period when ground disturbing activities occur, not upon discovery of human remains and subsequently being designated the MLD. Based upon significant amounts of resources already disturbed by past projects, it is imperative to begin this next project with proper protocols and a plan in place prior to discovery of human remains.

Response

As stated in Section 5 of the IS/MND, Mitigation Measure Cul1, a Treatment Plan will be established prior to initiation of excavation activities.

Comment 5

If the project impacts wetlands the IS/MND does not include measures for avoiding and protecting Native American cultural resources. Many of the TCR's are protected within the wetlands at this point in time. Any break of the protection zone will require consultation with the FIGR prior to excavation activities and lead agency representatives.

Response

Based on input from the U.S. Army Corps of Engineers, jurisdictional wetlands onsite will not be impacted from project activities and, therefore, Native American cultural resources will remain protected. Mitigation Measure Bio1 was modified to indicate that if wetlands will be impacted, additional consultation with the FIGR will be necessary.

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**MITIGATION MONITORING AND
REPORTING PROGRAM FOR THE
LARKSPUR LANDING
REMEDIATION PROJECT**

MITIGATION MONITORING AND REPORTING PROGRAM LARKSPUR LANDING REMEDIATION PROJECT 2000 LARKSPUR LANDING DRIVE, LARKSPUR, CALIFORNIA

The Mitigation Monitoring and Reporting Program (MMRP) is a California Environmental Quality Act (CEQA)–required component of the Mitigated Negative Declaration (MND) process for the Larkspur Landing Remediation Project located at 2000 Larkspur Landing Drive, Larkspur, California. The results of the initial study, including proposed mitigation measures, are documented in the Final MND.

CEQA requires that agencies adopting MNDs take affirmative steps to determine that approved mitigation measures are implemented subsequent to project approval. As part of the CEQA environmental review procedures, Section 21081.6 requires a public agency to adopt a monitoring and reporting program to ensure efficacy and enforceability of any mitigation measures applied to a proposed project. The lead agency must adopt an MMRP for mitigation measures incorporated into the project or proposed as conditions of approval. The MMRP must be designed to ensure compliance during project implementation. As stated in Section 21081.6(a)(1):

The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.

Table 1 is the final MMRP matrix. The table lists each of the mitigation measures proposed in the Final MND, and specifies the agency responsible for implementation of the mitigation measure and the time period for the mitigation measure.

Table 1. Mitigation Monitoring and Reporting Program, Larkspur Landing Remediation Project

Environmental Impact	Mitigation Measure	Responsible Party	Timing
Biological Resources			
Impact 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.	Bio1: As a mitigation measure to protect wetland resources, remediation will commence at the project site after the District has obtained verification of wetland delineation by the U.S. Army Corps of Engineers (USACE) and concurrence from the Regional Water Quality Control Board (RWQCB). In addition, if Clean Water Act Section 401 or 404 permits are deemed necessary by USACE or the RWQCB, the District shall comply with any conditions specified in the permits. If wetlands will be impacted, additional consultation with the Federated Indians of Graton Rancheria (FIGR) will be necessary.	Sanitary District No. 1 of Marin	Prior to initiation of remediation activities and after the District has obtained verification of wetland delineation by the USACE and concurrence from the RWQCB.
Impact on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Bio1 (see above)	Sanitary District No. 1 of Marin	Prior to construction activities and after the District has obtained verification of wetland delineation by the USACE and concurrence from the RWQCB.
Cultural and Tribal Cultural Resources			
Impact archaeological resource pursuant to 15064.5 or a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.	Cul1: The District will continue to consult with the FIGR prior to initiation of the remedial activities to identify the need for and procedures for the use of tribal monitors, and the appropriate treatment of Native American cultural materials and human remains identified during project implementation, in the event FIGR is identified by the Native American Heritage Commission as the Most Likely Descendant (MLD). A Treatment Plan will be established in consultation with FIGR prior to initiation of excavation activities.	Sanitary District No. 1 of Marin	Prior to initiation of excavation activities.
	Cul2: <ul style="list-style-type: none"> An experienced archaeologist, selected in consultation with the FIGR, will conduct monitoring in accordance with the established Treatment Plan, which will include "spot" (i.e., periodic) monitoring of excavations throughout the project focusing on excavation activities around the perimeter at the interface of fill and native material. More frequent monitoring will be conducted when closer to the area where important archaeological resources may occur. The District will coordinate with the FIGR prior to and throughout the project execution. 	Sanitary District No. 1 of Marin	Consultation with FIGR for selection of archaeologist will occur prior to initiation of excavation activities. Coordination of monitoring activities will occur throughout excavation work phases.

Environmental Impact	Mitigation Measure	Responsible Party	Timing
	<ul style="list-style-type: none"> • If the excavation occurs within 25 feet of an area where important archaeological resources may be present, an experienced archaeologist will perform continuous monitoring of removal of soils, including observation of soils in their stratigraphic layers. The archaeological monitor will be permitted to take appropriate samples as warranted. • The archaeologist will be authorized to stop or redirect project activity until an evaluation of the presence and integrity of any identified resource is made. The procedures will follow the established Treatment Plan. • A final report will be prepared describing methods used, results and findings of the archaeological monitoring, and the mitigation program. Copies of the final report will be provided to the District, the City of Larkspur, and the California Archaeological Site Survey Northwest Information Center. 		
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	Cul2 (see above)	Sanitary District No. 1 of Marin	During excavation work.
	Cul3: If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 25 feet will be redirected, and a qualified paleontologist will be contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel will not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and trace fossil evidence of past life such as tracks.	Sanitary District No. 1 of Marin	If paleontological resources are encountered during excavation.
Disturb any human remains, including those interred outside of formal cemeteries.	Cul4: If human remains are encountered during excavation activities, work at that location will stop and the Marin County Coroner will be notified (as required by California Health and Safety Code Section 7050.5). In the event that the human remains are believed to be those of a Native American, the established Treatment Plan will be followed in consultation with the archaeologist (as required by California Public Resources Code Section 5097.98). The Treatment Plan is expected to include removal of the remains with scientific recording and study, and timely return of the remains to the MLD for final reinternment.	Sanitary District No. 1 of Marin	If human remains are encountered during excavation. Note, Treatment Plan will be established prior to excavation commencement (see Cul1).