CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY

The Department of Toxic Substances Control (DTSC) 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:		CALSTARS CODING:
Remedial Action at Former Mare Island Naval Shipyard, Investigation Area F1 (IA F1)		20120847
PROJECT ADDRESS:	CITY:	COUNTY:
Intersection of Railroad Avenue and Gardner Avenue	Vallejo	Solano
PROJECT SPONSOR:	CONTACT:	PHONE:
Department of Navy	Scott Anderson	619-524-5808

APPROVAL ACTION UNDER CONSIDERATION BY DTSC:

☐ Initial Permit Issuance ☐ Permit Renewal ☐ Permit Modification ☐ Closure Plan
☐ Removal Action Workplan ☒ Remedial Action Plan ☐ Interim Removal ☐ Regulations
☐ Other (specify):

STATUTORY AUTHORITY:

☐ California H&SC, Chap. 6.5 ☒ California H&SC, Chap. 6.8 ☐ Other (specify):

DTSC PROGRAM/ ADDRESS:	CONTACT:	PHONE:
8800 Cal Center Drive, Sacramento, CA 95826	Gavin McCreary	916-255-3710

PROJECT DESCRIPTION:

The California Department of Toxic Substances Control (DTSC) is proposing approval of the Record of Decision (ROD)/Remedial Action Plan (RAP) for the former Mare Island Naval Shipyard IA F1. The proposed action consists of excavation, removal, and off-site disposal of 1,250 cubic yards of lead-contaminated soil from upland areas, as well as dredging, removal, and off-site disposal of 3,600 cubic yards of metals-contaminated wetland sediment. Clean soil and sediment will be imported and placed in the excavated areas as part of site restoration. The upland areas, referred to as Subarea 4 and Subarea 5 will remain clear after the project is complete to provide a wildland fire control break and be available for possible future reuse. A small portion of Subarea 6, will be replanted with similar vegetative types and quantities as currently found on the site. The excavation within a wetland (a majority of Subarea 6) will be backfilled with imported sediment and the wetland, including wetland vegetation, will be restored to its current condition. The project will be scheduled for a time of the year (April through October) when rainfall is unlikely. The Department of Defense derives authority to undertake this cleanup action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) under 42 United States Code U.S.C. Section 9604, 10 U.S.C. Section 2705. DTSC is proposing to approve this project pursuant to the authority granted under Chapter 6.8, Division 20, California Health and Safety Code (H&SC).

Investigation Area F1 includes 28 buildings and is partially paved with numerous paved lots and roads. Other areas include landscaping vegetation, natural vegetation, and a tidally influenced wetland. Investigation Area F1 is

approximately 62 acres in size and located in the southeastern portion of Mare Island at the approximate southeastern intersection of Price Way and Railroad Avenue (See Figure 1, Attachment A).

Current Use:

The Navy owns the site and it is currently inactive. Maintenance workers from the Navy, the City of Vallejo, and Island Energy visit the site occasionally to check electrical substations and towers, and perform basic site maintenance. The Navy maintains the project site as an industrial area and periodically clears vegetation for firebreak protection.

Proposed Project:

As detailed below in Table 1, the ROD/RAP proposes excavation of approximately 1,250 cubic yards (cy) of contaminated soil from upland Subareas 4 and 5, as well as excavation of 3,600 cy of contaminated sediment from wetland Subarea 6. Upland Subareas 4 and 5 will be backfilled with approximately 1,550 cy of clean soil, and the wetland subarea excavation will be filled with imported sediment. The proposed excavation areas are depicted in Figure 2, Attachment A.

Table 1: Proposed Project Activities

Construction Phase	Duration of Activity	Timing of Activity	Number of Personnel	Equipment (number)	Other
Phase 1: Demolition					
Removal of Existing Asphalt	5 days	Oct. 2019	3	Backhoe (1) Bulldozer (1) Dump Trucks (2) Jackhammer (1) Loaders (1) Concrete Saws (1)	275 SF (21 tons) of concrete and asphalt paving removal.
Phase 2: Site Preparation – Vegetation Removal & Installation of Exclusion (silt) Fencing					
Mobilization of excavation equipment	2 days	Oct. 2019	2	Excavator (1) Backhoe (1) Bulldozer (1) Grader (1) Water Truck (1) Semi & Trailer (1)	Equipment to be transported to site.
Implementation of EPP and SWPPP	5 days	Oct. 2019	3	Trencher (1) Bulldozer (1) Pickup Truck (1)	Hand clearing of vegetation in Subarea 6 and Installation of standard erosion controls and exclusion fencing (silt fencing).
Phase 3: Grading - Excavation of Soil and Sediment					
Subarea 4 Soil Excavation	1 month (22 days)	Oct. 2019 to Nov. 2019	10	Excavator (1) Backhoe (1) Bulldozer (1) Grader (1)	1,000 CY contaminated soil of 10,800 SF area at Bldg. A75 with dewatering activities. 490 Truck trips for Subareas 4-6.
Subarea 5 Soil Excavation	1 month (22 days)	Oct. 2019 to Nov. 2019	10	Excavator (1) Backhoe (1) Bulldozer (1) Grader (1)	250 CY contaminated soil of 2,700 SF area at Bldg. A17 with dewatering activities. 490 Truck trips for Subareas 4-6.
Subarea 6 Sediment Excavation	2 months (44 days)	Oct. 2019	10	Excavator (1) Backhoe (1) Bulldozer (1) Grader (1)	3,600 CY contaminated sediment of 38,350 SF area at Bldg. A223 with dewatering activities (490 Truck trips total). Biologist monitoring for SMHM.
Transport and Dispose Soil (Non-Hazardous Waste)	4 months (88 days)	Oct. 2019 to May 2019	3	Dump truck (3)	4,850 CY of contaminated soil (490 truck trips listed in 16.a) to Altamont Landfill in Livermore, California.
Site Maintenance for Air and Water Quality	6 months (132 days)	Oct. 2019 to Dec. 2019	2	Street sweeper (1) Water Truck (1) Water Pump (1)	Implement BMPs to control dust: wetting exposed soil, street sweeping, clean equipment.

Backfill Soil Excavations	1 month (22 days)	Oct. 2019 to Dec. 2019	10	Excavator (1) Backhoe (1) Bulldozer (1) Grader (1) Dump Trucks (3)	5,500 CY imported clean soil 540 truck trips (12 per day) as listed in Category 16.a. (per NAVY).
Phase 4: Paving					
Asphalt Concrete Paving	2 Days	Oct. 2019 to Nov. 2019	6	Dump Truck (1) Loaders (1) Asphalt Pavers (1) Rollers (1)	275 SF of concrete and asphalt paving removal per Section 8 on Page 29.
Phase 5: Site Restoration & Monitoring					
Subarea 6 Wetland Restoration	5 Days	Oct. 2019	5	Pickup Truck (2)	Hand transplanting of pickleweed from clean donor areas to support SMHM habitat.
Subarea 6 Monitoring	5 years	Oct. 2019 to Oct. 2024	1	Pickup Truck (1)	Monitoring and evaluation of the habitat recovery may be performed to assure successful habitat restoration.

Source: Trevet. 2015

Site investigation activities concluded that lead levels in Subareas 4 and 5 exceed "actionable" levels and soil remediation is required. Soil samples from Subarea 6 found "actionable" levels for lead, zinc, copper, and barium. Chemical constituents and actionable levels of soil contamination found at Subareas 4, 5, and 6 are presented in Table 2 below.

Table 2: Subarea Contamination Levels

Subarea	Lead (mg/kg)	Zinc (mg/kg)	Copper (mg/kg)	Barium (mg/kg)
4	6,810			
5	1,290			
6	95	1,870	367	591

Source: Trevet. 2015

Upon completing site remediation activities and subsequent backfill within the Subarea 6 wetland, this site will be revegetated to support the endangered salt marsh harvest mouse (SMHM) that is presumed present at and around Subarea 6. Restoration will include hand transplanting of wetland vegetation (i.e. pickleweed) from clean donor areas. Monitoring and evaluation of the habitat recovery will be performed to assure successful revegetation of the disturbed area. Institutional controls (ICs) for the upland areas will be established to limit future exposure of potential receptors to contaminated soil. The ICs for upland and wetland soil include restrictions of sensitive uses such as residences, certain schools, day cares and hospitals. The ICs also include the requirement to prevent development of ecological habitat in Subarea 4 and the portion of Subarea 5 planned for industrial reuse. The proposed ICs for wetland Subarea 6 will require long-term monitoring of revegetation efforts and reporting of the success of these efforts. Institutional controls applied to both the upland and wetland areas will prohibit sensitive reuses (e.g. residential, school, hospital, daycare uses), require a site management plan for any future disturbance of soil and groundwater, prohibit unauthorized use of groundwater, and installation of groundwater wells. The proposed field activities are planned to begin in October 2019 and be completed within 6 months of project initiation (Trevet 2015).

Past Use & History:

The Navy acquired Mare Island in 1853 and started shipbuilding operations the following year. During World War II (1941 to 1945), Mare Island Naval Shipyard (MINS) reached peak capacity for shipbuilding, as well as vessel repair, overhaul, and maintenance. Following World War II, MINS was a primary station for construction and maintenance of the Navy's Pacific submarine fleet. However, due to changing naval needs in the postwar environment, shipyard activity decreased, and the Navy closed MINS on April 1, 1996, after 142 years of operation.

Prior to the 1900s, the IA F1 area was primarily a tidal wetland, although ordnance was manufactured and stored at IA F1 since the initiation of Mare Island Naval operations. By 1932, most of the area's ground elevation was raised with imported dredge spoils or upland fill material. Between 1857 and 1975, the primary purpose of the Mare Island ordnance facility was to store and process ammunition used on Naval ships. Black-powder-loaded munitions were emptied and refilled at the shipyard. During the 1890s, facilities were added for loading gun cotton and the loading of Explosive D (ammonium picrate) was in full operation by 1916 (Trevet 2015). Ordnance production ended in 1973.

Subsequently, many production buildings, magazines, and warehouses were used for storage of inert materials and ordnance-related supplies. Historical munitions related activities at IA F1 created concern for the presence of munitions and explosives of concern (MEC) at Mare Island (Trevet 2015).

Subsurface Investigation History:

A series of remedial investigations were performed at IA F1 between 1983 and 2009. Various samples that included soil, sediment, groundwater and soil gas were collected and analyzed for metals (including hexavalent chromium), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), petroleum hydrocarbons, organotins, and explosives. The chemicals of concern (COCs) selected for remedial action were those for which the risk posed exceeded the acceptable range (ChaduxTt 2012), based on the anticipated reuse scenarios and receptors for each subarea. Chemicals of concern identified during these investigations include lead in soil of Subarea 4 and Subarea 5. Lead was also identified as a chemical of ecological concern in Subarea 4 (Trevet 2015). Any residual MEC found on site will be handled by the Munitions Response Program as a separate action and remediation of residual MEC is not part of this proposed action.

Exposure to COCs in groundwater and subsurface soil do not pose unacceptable risk to current and anticipated future receptors (Trevet 2015).

During the 2012 Remedial Investigation (RI), remaining concentrations of COCs in groundwater, soil, and soil gas were evaluated. For site characterization and risk assessment purposes, IA F1 was subdivided into seven subareas, which are detailed in Table 3 below. The RI concluded that groundwater and soil gas throughout the site, and soil for Subareas 1, 2, 3, and 7 were not identified as media of concern for the anticipated land-use scenarios. Therefore, these areas were not included in the work that is the subject of this initial study (Trevet 2015).

Table 3. Subarea Buildings and Areas

Subarea Number	Buildings/Areas
1	Buildings A215, A220, A221, A222, A223, and A253
2	Buildings A69, A80, A130, A197, A 224, A258, A271 and former buildings A187 and A265
3	Buildings A31, A54, A76, A142, A260, A280, and former Building A216
4	Buildings A75, A131, A159, A225, A248, A256, A278 and former Building A190
5	Buildings ARS-4, A15, A16, A17, A20, A42, A49, A65, A71, A72, A103, A108, A144, A145, A246, A266, A267, A276, A288, and former Buildings A53, A62, A73, A198, and A913
6	Building A223, Wetlands adjacent to Mare Island Strait
7	Buildings ARS-7, A1 through A8, A11, A136, A154, A226, and A228 (reference RI report)

Source: Trevet. 2015

The RI report recommended evaluation of lead and zinc as chemicals of ecological concern (COEC) within Subarea 4. Further evaluation performed in the subsequent Feasibility Study (FS) determined that there is no unacceptable risk to ecological receptors because there is no complete exposure pathway; however, due to an unacceptable risk to potential future industrial users, lead needs to be evaluated for protection of human health in Subarea 4 (Trevet 2015).

The portion of Subarea 5 that includes Building A17 is planned for reuse as a regional park. Due to the potential unacceptable risk posed to recreational receptors and risk posed to ecological receptors, lead is considered a COC and COEC for Building A17 (Trevet 2015).

Although barium, lead molybdenum, and zinc were all identified as COECs for Subarea 6, no unacceptable risks to human health were identified for the planned open space conservation area for this subarea (ChaduxTt 2012).

Risk Assessments:

Based upon a Human Health Risk Assessment, detailed in the 2012 RI and refined in the 2016 FS, unacceptable exposure to future commercial/industrial workers may result from lead in surface soil in Subarea 4. Unacceptable risks to hypothetical future residents (and therefore potentially to recreational receptors) may result from lead in surface and shallow soil in Subarea 5.

Based upon an Ecological Risk Assessment, detailed in the 2012 RI and refined in the 2015 FS, unacceptable risks to ecological receptors may result from lead within soil in the areas around Building A17 within Subarea 5 and Building A223 within Subarea 6. Unacceptable risks to ecological receptors may result from barium, copper, molybdenum, and zinc within sediment at Subarea 6 (Trevet 2015).

Proposed Response Actions:

In response to the risk assessment findings, the ROD/RAP proposes measures and Remedial Action Objectives (RAO)s to mitigate each of the unacceptable risks described above, as well as controlling risk by prohibiting the use of groundwater for drinking water and other prescribed uses without DTSC authorization.

The ROD/RAP recommended response actions consist of excavating contaminated surface and subsurface soil to a depth of up to 2.5 feet below ground surface (bgs) in Subarea 4 and Subarea 5, and excavation of wetland sediment to a depth of up to 2.5 feet bgs in Subarea 6 (see Figure 2).

The excavation within Subarea 4 will excavate approximately 1,000 cubic yards of soil from the south side of Building A75. The depth of excavation will be approximately 2.5 feet bgs over a 10,800-square foot area.

The excavation within Subarea 5 will excavate approximately 250 cubic yards of soil from the northeast, southeast, and southwest sides of Building A17. The depth of the excavation will be approximately 2.5 feet bgs over a 2,700-square foot area.

The excavation within Subarea 6 will excavate approximately 3,600 cubic yards of sediment from the wetland area on the east side of Building A223. The depth of the excavation will be approximately 2.5 feet over a 38,350-square foot area (0.884 acres).

Site clearing of Subareas 4 and 5 will be conducted with hand tools and/or mechanized construction equipment depending upon which method is deemed more effective. Clearing of the Subarea 6 wetland will be conducted using hand tools to avoid potential impacts to sensitive wetland species and minimize loss of vegetation. Fencing around Subarea 6 to control movement of sensitive wetland species, as well as surface water runoff, would also be installed manually. Excavation at the three sites will be performed with heavy construction equipment such as excavators. No damage to adjacent buildings is expected. Confirmation soil samples will be collected and analyzed from the bottoms and sidewalls of the excavations to ensure contaminant concentrations are below the proposed remediation goals (see Table 4). Excavations within Subareas 4 and 5 will be backfilled with clean soil to approximate the pre-construction conditions. The excavation within Subarea 6 will be backfilled with imported sediment and the wetland will be restored.

Table 4: Proposed Remediation Goals

Subarea	Chemical	Media	Remediation Goal
4 (Building A75)	Lead	Surface Soil	345.6 milligrams per kilogram
5 (Building A17)	Lead	Surface Soil	105.6 milligrams per kilogram
6 (Building A223)	Lead	Sediment	59 milligrams per kilogram
6 (Wetland)	Zinc	Sediment	230 milligrams per kilogram
6 (Wetland)	Copper	Sediment	120 milligrams per kilogram
6 (Wetland)	Barium	Sediment	314.4 milligrams per kilogram

Source: Trevet. 2015

Based on an assumed 25 percent swell factor, the expected loose volume of soil requiring transportation and disposal from Subareas 4 and 5 excavations is approximately 1,563 cubic yards. Based on the same assumed factor, the expected loose volume of sediment requiring transportation and disposal from the Subarea 6 excavation is 3,600 cubic yards. Prior to excavation activities, an estimated 275 cubic yards of concrete and asphalt paving would be removed from Subareas 4 and 5; this area would be repaved with asphalt concrete after backfilling activities are complete.

Excavated soil and sediment from Subareas 4 through 6 will be characterized and disposed as non-hazardous waste at the Altamont Landfill in Livermore, California. The excavated areas will be backfilled with clean soil and sediment from off-site sources by workers using heavy equipment. Clean backfill soil will be delivered to the Site by trucks. The Navy considered using marine tugs and/or barges to bring clean fill material to the site, but rejected this alternative from further consideration due to an unacceptable level of air emissions from the marine diesel engines.

The proposed site activities include institutional controls to restrict use of IA F1 by sensitive users, such as residential or agriculture, to avoid the exposure to any potential residual soil contamination. Lastly, a site management plan will be

required as an institutional control to regulate disturbances of groundwater or soil, and prohibit the use of groundwater without prior DTSC authorization.

ENVIRONMENTAL IMPACT ANALYSIS:

1. Aesthetics

Project Activities Likely to Create an Impact:

- Mobilization of excavation equipment
- Movement of trucks to transport materials to and from the site during remediation
- Movement of vehicles to bring personnel and supplies to the site during remediation
- Soil excavation at two areas.
- Excavation of sediment from wetland area

Description of Baseline Environmental Conditions:

The project site is located on the southeastern edge of Mare Island, within the City of Vallejo. The land at IA F1 is currently inactive, and includes both unused low-lying, multistory buildings and vacant land. The Department of the Navy maintains IA F1 as an industrial area by periodically clearing vegetation and as a wildland fire control measure. Adjacent lands are vacant, industrial, or used for recreation. Mare Island Strait, the nearest open body of water, abuts the southeast side of the site. The following photographs of the Site were provided by the Navy and taken during previous site assessment activities:

Photograph 1: View north of existing buildings in upland area

Photograph 2: View of upland area with buildings facing northeast

Photograph 3: View east showing wetlands adjacent to Mare Island Strait

Analysis as to whether or not project activities would:

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

Impact Analysis: The project site is not located near any designated state scenic highways and is not anticipated to result in any construction or development of any buildings that could obstruct any views or adversely affect a scenic vista. Excavated areas will be backfilled and the site restored to its current condition. Construction activities are expected to take approximately six months.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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: Although the visual context of the site is appealing due the proximity to Mare Island Strait, as well as the existing vegetation and open space, there are no specific scenic resources located on the project site or in the project vicinity. There are no designated state scenic highways on or in the vicinity of the site, based on the California Department of Transportation's Scenic Highway Programs officially designated state scenic highways list[1]. All field actions evaluated in this Initial Study, except for work in the Subarea 6 wetland, would occur in developed areas and would not substantially affect scenic resources. Work in the undeveloped portion of Subarea 6 would be complete and the site replanted within 6 months; therefore, there would be only temporary, less than significant impacts to scenic resources. No historic buildings would be damaged by cleanup activities. Project activities will include project controls to avoid unacceptable dust emissions or soil/chemical releases so that no damage to scenic resources would occur.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis: The cleanup actions include excavating soil from two locations and sediment from one location at the site, transporting approximately 1,250 cubic yards of excavated soil and 3,600 cubic yards of excavated sediment for offsite disposal, importing approximately 1,500 cubic yards of soil and 3,600 cubic yards of sediment and backfilling the excavations to reestablish the previous elevation. Any paved surfaces in upland areas will be restored after backfilling and comparable vegetation reestablished. The wetland area will be backfilled to its original elevation with imported fill sediment and wetlands habitat restored to target criteria. The current area is developed and no structures will be demolished or constructed as part of this project. Any potential impacts from excavation activities are temporary and would be less than significant.

The excavations would be backfilled and any paved surfaces restored. After construction is complete, no changes to project site aesthetics are anticipated. The field activities are scheduled for completion within 6 months of initiation and any potential effects are expected to be short term.

Conclusion:

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[1] *California Department of Transportation, Scenic Highway Program. Officially Designated State Scenic Highways. Updated October 2013. Available at: < http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm>. Accessed March 8, 2017.*

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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: It is possible that during the six months of remediation, construction activities could create minor new sources of light or glare due to the presence of cleanup equipment (i.e., headlights on vehicles, reflection of sunlight). However, project activities would primarily be implemented during daylight hours and are not anticipated to require the use of additional lighting. Based on the short duration of remediation activities and the limited need for additional lighting, any light or glare effects would be less than significant. The project does not involve the construction of buildings/structures that would create new, long-term sources of lighting or glare.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

California Department of Transportation, Scenic Highway Program. Officially Designated State Scenic Highways. Updated October2013. Available at: < http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm>. Accessed March 8, 2017.
Trevet. 2015. Feasibility Study for Investigation Area F1, Former Mare Island Naval Shipyard, Vallejo, California. September.

2. Agricultural Resources

Project Activities Likely to Create an Impact:

- None.

Description of Baseline Environmental Conditions:

The project area is in a formerly industrial area of the closed Mare Island Naval Shipyard in Vallejo. The project site has been used for military purposes for at least 150 years and is designated as "Urban and Built-Up Land."[2] The property is not under a Williamson Act contract.

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 is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the California Resources Agency Farmland Mapping and Monitoring Program maps.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated

[2] *California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. Solano County Important Farmland Map 2010. June 2011.*

☐ Less Than Significant Impact
☒ No Impact

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

Impact Analysis: The project is not zoned for agricultural use or subject to a Williamson Act Contract.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses.

Impact Analysis: The project site is not located near any Farmland and is surrounded by areas designated as Urban and Built-Up Land.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used:

California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2011. Solano County Important Farmland Map 2010. June.
California Department of Conservation, Division of Land Resource Protection. 2013. Solano County Williamson Act FY 2013/2014.

3. Air Quality

Project Activities Likely to Create an Impact:

- Mobilization of excavation equipment
- Movement of trucks to transport materials to and from the site during remediation
- Movement of vehicles to bring personnel and supplies to the site during remediation
- Soil excavation at three areas.
- Excavation of sediment from wetland area
- Import of fill material by truck
- Deposition of fill material and site restoration

Description of Baseline Environmental Conditions:

The proposed project is located within the jurisdiction of the Bay Area Air Quality Management District (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 (PM2.5), and particulate matter less than 10 microns (PM10). The United States Environmental Protection Agency (USEPA) has designated the SFBAAB as being in non-attainment with Federal Ambient Air Quality Standards for ozone and PM2.5 (CARB 2014).

Analysis as to whether or not project activities would:

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

Impact Analysis:

Air emissions in the Bay Area are regulated by the BAAQMD. The BAAQMD is required, pursuant to the Clean Air Act, to reduce emissions of criteria pollutants for which the BAAQMD is in non-attainment. The site area is out of attainment for ozone, PM10 and PM2.5. The BAAQMD regulations specify standards for fugitive dust emissions and particulate matter emissions. While the project is exempt from obtaining air permits under BAAQMD Regulation 2, the project will implement dust control measures within the area during the field activities to alleviate or prevent dust nuisance.

Potential air quality impacts were assessed according to the 2017 BAAQMD CEQA Guidelines. These guidelines include significance thresholds for criteria air pollutant emissions from project operations. The project activities discussed in this Initial Study would most likely fall under Construction-related impacts. The guidelines set the following thresholds of significance for construction-related criteria air pollutants and precursors.

The project emissions were evaluated using the *California Emissions Estimator Model* (CalEEMod) Version 2016.3.1. CalEEMod was developed by the California Air Pollution Control Officers Association to provide a uniform platform for government agencies, land use planners and environmental professionals to estimate potential emissions associated with both construction and operation use of land use projects and is suitable for use in California Environmental Quality Act compliant documents. The complete CalEEMod output is available in Attachment C. The CalEEMod overall emissions estimates for unmitigated construction activities were compared with the thresholds of significance (see Table 3-1).

Table 3-1: Construction Air Emissions

	ROG (pounds per day)	**NOx (pounds per day)**	**CO (pounds per day)**	**SO2 (pounds per day)**	**Exhaust PM10 (pounds per day)**	**Exhaust PM2.5 (pounds per day)**
2019 Construction Emissions	2.5	27.6	14.3	0.03	1.3	1.2
Significance Threshold	54	54	None	None	82	54
Exceeds Threshold	No	No	N/A	N/A	No	No

Source: Bay Area Air Quality Management District. 2017. California Environmental Quality Act Air Quality Guidelines. May.

Based on the CalEEMod analysis, none of the estimated construction emissions exceed the thresholds of significance for average daily emissions. Best management practices (BMPs) will also be observed to limit other criteria air pollutants without thresholds of significance. These include:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials for offsite disposal or require trucks to maintain at least 2 feet of freeboard.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at the site if visible soil material is observed.
- Vehicle idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided at all access points to notify construction workers of this requirement.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surface at any one time.

Sandbags or other erosion control measures shall be installed to prevent silt runoff.
As the project site is currently unused and no development is anticipated as part of the project, no operation related activities are anticipated. Consequently, there are no estimated operation related emissions.

The project would not involve or induce population growth or cause an exceedance of established population or growth projections. Furthermore, the project would not produce long-term significant quantities of criteria pollutant or violate ambient air quality standard. Therefore, the project is consistent with the 2005 Ozone Strategy (BAAQMD, 2006), the 2017 Bay Area Clean Air Plan (BAAQMD, 2017), and the Particulate Matter Implementation Schedule (BAAQMD, 2005) and would not conflict with or obstruct their implementation.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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, the project activities that would likely impact air quality are short-term construction activities. As shown in Table 3-1, estimated construction-related emissions would not exceed thresholds of significance established in the 2017 BAAQMD CEQA Guidance. The 2017 BAAQMD CEQA guidelines recommend Basic Control Measures to control fugitive dust emissions from construction activities, including the measures listed in Section 3(a) above. Assuming the applicable control measures indicated in the guidelines would be implemented during cleanup activities, air pollutant emissions from construction activities would be considered a less-than-significant impact.

Emissions from gasoline- and diesel-fueled vehicles and equipment are not expected to result in significant short-term air quality impacts. With the implementation of BAAQMD-recommended dust control measures, 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
☐ Potentially Significant Unless Mitigated
☒ 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 and the 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 cumulatively considerable net increase of any criteria pollutant or ozone precursor emissions during project activities.

As presented in Item 3b. above, implementation of particulate matter control measures recommended by BAAQMD will ensure that the impacts associated with fugitive dust emissions are reduced to a less-than-significant level. Therefore, the project would not be cumulatively considerable and cumulative impacts would be less-than-significant.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis:

The BAAQMD defines sensitive receptors as the elderly, children, infirm, or persons with particular sensitivity to air pollutants. The closest sensitive receptors to the project vicinity are located to the east across Mare Island Strait. Below is a listing of the distances to the nearest sensitive receptors to any of the sites identified and evaluated by this Initial Study:

- Residential housing: Approximately 2,400 feet to the east.
- School: Approximately 9,900 feet to the northeast.
- Retirement Community: Approximately 10,200 feet to the east.
- Hospital: Mare Island VA Outpatient Clinic located 7,700 feet northeast on Mare Island.

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

- The project activities would occur in commercial/industrial developed areas that are farther than 0.09 mile from sensitive receptors (such as the ones listed above).
- A limited number of construction vehicles or equipment would operate simultaneously.
- Standard construction practices, such as using a water truck and covering soil stockpiles, would be used for dust suppression.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis:

1. The project is not located in the vicinity of any known odor sources, e.g. wastewater treatment plant, active landfill, food manufacturing plan. Potential odor sources from the project include exhaust from construction equipment.
2. Odor events are anticipated to occur during excavation and backfilling activities. These activities are expected to occur during normal working hours, e.g. 8:00 am to 5:00 pm five days a week over two months in 2017.
3. The distance from the potential odor sources to the nearest sensitive receptor (residences to the east across Mare Island Strait) is approximately 2,400 feet.
4. According to the *Feasibility Study Investigation Area F1 f*or the Former Mare Island Naval Shipyard, the predominant wind direction at Mare Island is from the west and typically average 5 to 10 knots.

In general, odors from construction activities are those associated with diesel exhaust from heavy equipment and are difficult to assess as the identification and degree of perceived odor is subjective. In addition, the measures taken to control dust emissions may 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
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

f. Result in human exposure to Naturally Occurring Asbestos.

Impact Analysis:

No rocks likely to contain naturally occurring asbestos (NOA) are present in the project area, as illustrated on the map entitled "Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California" (United States Geological Survey [USGS] 2011). Three principal geologic units were identified at Mare Island for areas extending beyond the original island: (1) artificial fill material, (2) unconsolidated natural deposits, and (3) bedrock. Bedrock is encountered between 0 to 3 feet bgs in the western portion of IA F1 to more than 35 feet bgs in the eastern portion of the site. Soils or rocks that may contain NOA have not been observed at the project area (ChaduxTt 2012). For these reasons, exposure of site workers or the surrounding community to NOA is not considered to be a potential hazard.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used:

Bay Area Air Quality Management District. 2017. California Environmental Quality Act Air Quality Guidelines. May.
California Air Pollution Control Officers Association. 2013. California Emissions Estimator Model, Version 2013.2. July.
ChaduxTt. 2012. Final Remedial Investigation Report, Installation Restoration Program Sites Within Investigation Area F1, Former Mare Island Naval Shipyard, Vallejo, California.
United States Geological Survey (USGS). 2011. "Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California." Open File Report 2011-1188.

4. Biological Resources

Project Activities Likely to Create an Impact:

- Removal of vegetation and excavation of contaminated sediments in a coastal salt marsh wetland.
- Excavation of contaminated soil 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, concrete, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil by truck.
- Site restoration including backfill of all excavated areas and repaving previously hardscaped surfaces.
- Restoration of wetland area including the hand transplanting of pickleweed from clean donor areas outside of the target treatment zone.

Description of Baseline Environmental Conditions

The project site has remaining buildings, but is currently unused. Subarea 6, the east side of the site is tidal wetlands. The site is open to Mare Island Strait on the east side and fenced to the west to restrict unauthorized access to the undeveloped southwestern portion of Mare Island. Other major habitat types found at or around Mare Island include intertidal mudflats, open marine water, tidal wetlands, nontidal wetlands, active dredge ponds, uplands and marine habitat, including shoreline armoring consisting of concrete or woodpiles and riprap. These habitat types are described in the ecological risk assessments for onshore and offshore areas of Mare Island (Tetra Tech Environmental Management, Inc. ([TtEMI] 2002a-b).

Terrestrial Habitats

The terrestrial, non-wetland project areas are composed entirely of developed (urban) habitat type (California Department of Fish and Game [CDFG], currently referred to as the California Department of Fish and Wildlife [CDFW] 1988). Landscape trees and patches of non-native annual grasses exist within the unpaved areas between buildings on barren areas of the site. A large portion of the site is covered with asphalt and buildings that provide little or no biological habitat. The upland habitat provides nesting, roosting, and foraging habitat for mammals and birds, even though few native plants are present. The only special status species expected to be present in the upland area is the northern harrier (*Circus cyaneus*), a California species of special concern and white tailed kites (*Elanus leucurus*), and a California fully protected species, which may forage in the area (Remedial Investigation). In 2012, a CDFW/United States Fish and Wildlife Service approved Biological Monitor observed the following bird species in the project area: Cliff Swallow (*Petrochelidon pyrrhonota*), Killdeer (*Charadrius vociferous*), Osprey (*Andion haliaetus*), Mallard (*Anas platyrhynchos*), American Kestrel

(*Falco sparverius*), Clapper Rail (*Rallus crepitans*) and great blue heron (*Ardea Herodias*) (Battelle 2014, ISR-JV 2014). These were observed and may be adversely affected by project activities, especially if nesting.

Grassland depressional sites are found within IA F1; especially within the northeast portion. Some of them support herbaceous hydrophytic vegetation. These locations are associated with shallow, degraded depressions and small artificial swales adjacent to several buildings and roads within ruderal and non-native grassland habitats. The IA F1 area is maintained by the Navy as an industrial area and is regularly mowed as a part of the Navy's on-going maintenance program to maintain for industrial reuse. However, several inches of a sparse, closely cropped cover (approximately 25%) of herbaceous vegetation comprised of disturbance-oriented native and non-native hydrophytic plant species including Bermuda grass (*Cynodon dactylon*), salt grass, and beach sandspurry (*Spergularia macrotheca* var. *macrotheca*) were observed in the largest upland depressions. Other herbaceous plant species expected to occur in this habitat type include Italian ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum murinum* ssp. *gussoneanum*), bristly ox-tongue (*Picris echioides*), hyssop loosestrife (*Lythrum hyssopifolium*), curly dock (*Rumex crispus*) and broadleaved cattail (*Typha latifolia*). A small amount of soil saturation and/or inundation from recent precipitation was observed in a number of these upland depressions.

Wildlife species potentially present in the upland depressions include deer mice (*Peromyscus maniculatus*), house mice, and California voles. Coyotes (*Canis latrans*), raccoons, and skunks may forage within these areas. Birds of prey, such as harriers and kites, may forage overhead. When the depressions are inundated with water, the Pacific chorus frog (*Pseudacris regilla*) may occupy the pools and Yuma myotis (*Myotis yumanensis*) likely forages on the aquatic macro-invertebrates associated with the pools.

Adult eucalyptus (Eucalyptus sp.) trees have been identified in an area of approximately 0.19 acres, along Rail Road Avenue, within IA F1. The trunks are rooted outside of the project boundary, but the canopy extends into a small portion of IA F1. The trees are non-native and likely resultant of the Navy's past landscaping activities.

The western red bat (*Lasiurus blossevillii*) and hoary bat (*L. cinereus*) may overwinter in eucalyptus foliage. Raptors also potentially nest in the eucalyptus trees. However, while performing observations to establish existing conditions, no bats, bat roosts, or signs of bats were observed within the eucalyptus trees. Although monarch butterflies (*Danaus plexippus*) are known to use eucalyptus trees on Mare Island for overwintering habitat, the narrow row of eucalyptus trees do not provide typical roosting habitat and the butterflies are not expected to congregate in roosts within this area of trees. Leaf litter from the trees may support overwintering western red bats as well as a few rodents, including deer mice, house mice, and California voles.

Non-native grassland communities are found throughout IA F1. This plant community is typically dominated by disturbance-tolerant non-native annual grasses and forbs that closely intergrade with the ruderal vegetation. Approximately a third of the non-native grassland was observed as bare ground during the December 2010 visit to assess existing conditions. The other approximately two-thirds of the habitat was a mixture of mowed vegetation. The remaining areas also included slightly taller vegetation and mulch from mowing.

Plant species expected to occupy the non-native grassland communities include wild oat (*Avena fatua*), rattail fescue (*Vulpia myuros*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Mediterranean barley, black mustard (*Brassica nigra*) yellow star thistle (*Centaurea solstitialis*), wild carrot (*Daucus carota*), wild lettuce (*Lactuca serriola*), cheeseweed (*Malva parviflora*), maritime plantain (*Plantago maritima*) and wild radish (*Raphanus sativus*).

The non-native grasslands of the site includes large, relatively bare areas and other areas with minimal vegetation, so there is little value to wildlife that would typically be found in non-native grasslands in this part of the state. Little forage exists for even small mammals. Areas with abundant vegetation and with combinations of patchy vegetation and mulch provide habitat for small mammals including California voles, deer and house mice. Black-tailed jackrabbits have been observed in the grasslands, but infrequently. Habitat increases somewhat following Navy maintenance activities and during the spring growth that produces forage for small mammals. As conditions improve, Raccoons, skunks, and coyotes may enter the grasslands to forage. Ground-dwelling grassland birds including horned larks (*Eremophila alpestris*) and western meadowlarks (*Sturnella neglecta*) may become more numerous. Raptors such as northern harriers, whitetailed kites, and red-tailed hawks will have additional prey when grasses grow more fully. Western toads (*Anaxyrus boreas*) likely use this habitat type to forage for insect prey at night. Bats, such as the Mexican freetailed bat, are expected to forage above these grassland areas.

Areas of ruderal vegetation, plant species that occur in weedy, disturbed areas that are typically dominated by non-native annual or perennial species, are also found in a large portion of IA F1. Ruderal plant species include sweet fennel (*Foeniculum vulgare*), scotch broom (*Cytisus scoparius*), Harding grass (*Phalaris aquatica*) and coyote bush. At the time of the survey in December 2010, ruderal vegetation supported a thin herbaceous layer of recently germinated annual

grasses and forbs mixed with scattered clumps of woody perennial weeds and shrubs that mowing largely reduced to small branches extending several inches above the ground.

Other areas of ruderal vegetation are dominated by stands of non-native trees including Peruvian pepper tree (*Schinus mollis*), silver wattle, black locust (*Robinia pseudoacacia*) and Torrey pine (*Pinus torreyana*) were observed in IA F1. Some of the trees are likely resultant of landscape development.

Ruderal vegetation generally has limited wildlife value. Areas with remnant vegetation and areas with combinations of patchy vegetation and mulch provide habitat for a variety of small mammals including California voles, deer and house mice. Black-tailed jackrabbits have been documented within these habitats.

A portion of IA F1 is considered developed area and includes historic munitions storage buildings, offices, associated outbuildings, equipment yards, piers, remnant staging areas and access roads associated with Naval activities. The majority of these developed areas are void of vegetation.

Abandoned buildings may be used by bats for roosting and hibernation during winter months. An active night roost for bats was observed in the outside stairwell in Building A266. No other bats, bat roosts, or signs of bats were found during inspections of building exteriors and grounds. Although evidence of a night roost was observed on the outside of only one building, bats of several species could potentially roost inside structures without showing signs of occupancy from the exterior of structures. No special-status species of bats are expected to breed on the project site. Other cavity-dwelling species, such as European starlings (*Sturnus vulgaris*), often build nests in cracks and other suitable openings. Evidence of mud nests under the eaves of some buildings suggests that Cliff swallows (*Petrochelidon pyrrhonota*) and/or barn swallows (*Hirundo rustica*) have previously nested on a few of the buildings. During the 2010 survey, two Barn owls (*Tyto alba*) were observed roosting in buildings and several structures showed evidence of active barn owl roosts. Evidence of inhabitation of roof rats (*Rattus rattus*) and house mice was documented on many structures (H.T. Harvey & Associates 2011).

Offshore Habitats

A 9-acre coastal salt marsh wetland is located within the tidal wetland area along the eastern periphery of IA F1, abutting the Mare Island Strait. The majority of the habitat is influenced by tidal water and wave action. The coastal salt marsh wetland is characterized by the prevalence of pickleweed (*Salicornia pacifica*) and salt grass (*Distichlis spicata*) with pickleweed as the predominant plant species. Other salt marsh plants in the wetland include cordgrass (*Spartina* sp.), marsh gumplant (*Grindelia stricta* var. *angustifolia*), bush seepweed (*Suaeda moquinii*), fat hen (*Atriplex triangularis*), California sea lavender (*Limonium sinuatum*), and alkali heath (*Frankenia salina*).

Mammals within the wetland are mostly limited to rodent species. The California vole (*Microtus californicus*) is commonly found. The salt marsh harvest mouse (*Reithrodontomys raviventris*) is present within the wetland. The Suisun shrew (*Sorex ornatus sinuosus*) may possibly occur. Other rodent species that are potentially present include the house mouse (*Mus musculus*) and the Norway rat (*Rattus novegicus*). Raccoons (*Procyon lotor*) and striped skunks (*Mephitis mephitis*) may occasionally forage in the wetland.

Bird species possibly occupying the wetland within IA F1 include savannah sparrow (*Passerculus sandwichensis*), San Pablo song sparrow (*Melospiza melodia samuelis*), and winter migrant populations of white-crowned sparrows (*Zonotrichia leucophrys*). Herons and egrets, including the great blue heron (*Ardea herodias*) and the great egret (*Ardea alba*) are common aquatic predators that may be found in the wetland. Birds of prey, such as white-tailed kites (*Elanus leucurus*) and northern harriers (*Circus cyaneus*), and bats including Mexican free-tailed bats (*Tadarida brasiliensis*) may forage over the wetland canopy (H.T. Harvey & Associates 2011).

Species of Special Concern

Information was obtained regarding species of concern in the project area from numerous previous reports for the site as well as a CDFW Natural Diversity Database search (CDFW 2016). The California Department of Fish and Wildlife maintains the California Natural Diversity Database (CNDDB) to inventory the status and locations of rare plants and animals in California. Three types of species of special concern (SSC) are discussed in the following sections: 1) threatened and endangered species, 2) commercially- or recreationally-important species, and 3) other species valued by society.

Threatened and Endangered Species

The following flora and fauna listed as threatened or endangered by the state or federal government reside or feed in Mare Island Strait or have been historically observed in the general vicinity of the site.

- Suisun thistle (*Cirsium hydrophilum var. hydrophilum)* is an endangered plant species found in dense salt marsh.

- Contra Costa Goldfields (*Lasthenia conjugens*) is an endangered plant species found in marsh habitats.
- Soft bird's-beak (*Cordylanthus mollis* ssp. *Mollis*) is an endangered plant species found in salt marshes along the central California coast.
- California Freshwater Shrimp (*Syncaris pacifica*) is an endangered species found in undercut banks along Napa River.
- California Red-Legged Frog (*Rana draytonii*) is a threatened species found in marshes and ponds.
- Giant Garter Snake (*Thamnophis gigas*) is a threatened species associated with permanent bodies of water in a variety of habitats.
- Bald eagle (*Haliaeetus leucocephalus*) is state endangered species that is rare in the Mare Island area with occasional visits by migrants.
- Swainson's hawk (*Buteo swainsoni*) is a threatened species found in open, riparian habitats.
- California black rail (*Laterallus jamaicensis coturniculus*) is a threatened species found in tidal salt marshes.
- California clapper rail (*Rallus longirostris obsoletus*), an endangered species endemic to saline and brackish wetlands of San Francisco Bay and its tributaries. In December 2009, a California clapper rail was identified approximately one mile north of the project site within the tidal wetlands, in the northwestern portion of the Western Magazine Area Individuals may occasionally pass through and forage in the marshes. The species is presumed present.
- Western snowy plover (*Charadrius alexandrines nivosus*) is a threatened species that is common on sandy marine and estuarine habitats.
- California least tern (*Sternula antillarum browni*) is an endangered species found in the San Pablo Bay in abandoned salt ponds and estuarine shores.
- The northern harrier (*Circus cyaneus*), a California species of special concern, may forage in the upland area.
- White-tailed kite (*Elanus leucurus*) a California fully protected species, may also forage in the upland area.
- Salt marsh harvest mouse (*Reithrodontomys raviventris*), an endangered species endemic to the marshes of San Francisco Bay, was identified in in trapping efforts in the early 1990s and in 2000. The salt marsh harvest mouse is presumed present in the salt marsh habitat.
- Green sturgeon (*Acipenser medirostris*) is a threatened species found in tidal wetlands.
- Delta smelt (*Hypomesus transpacificus*) is a federally threatened and California endangered species found in tidal wetlands.
- Longfin smelt (*Spirinchus thaleichthys)* is a California threatened species found in tidal wetlands.
- Rainbow trout (Steelhead) (*Oncorhynchus mykiss irideus)* is a federally threatened species found in tidal wetlands.
- Chinook salmon (winter run) (*Oncorhynchus tshawytscha)* is a federally and California endangered species found in tidal wetlands.
- Chinook salmon (spring run) (*Oncorhynchus tshawytscha)* is a federally and California threatened species found in tidal wetlands (Trevet 2015).

Commercially or Recreationally Important Species

The project area is located adjacent to Mare Island Strait. Recreational fishing for striped bass, starry flounder, sculpin, shad, and other species occurs from the shoreline and from boats along the shores of Mare Island Strait. In addition, the western shore of the island is the most important nursery area in the Bay Delta for Dungeness crab and bay shrimp, and the shore supports recreational fishing for these species (Ecology and Environment, Inc. [E&E] 1983).

Other Species of Value

Great blue herons *(Ardea herodias)* were observed on Mare Island in January 1996. Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa)*, a CDFW SSC, were last recorded in 1998 on Mare Island. Additionally, many migrating birds use the vicinity of Mare Island and fish-eating birds, such as pelicans, cormorants, and terns, may feed in Mare Island Strait. These birds are protected by the Migratory Bird Treaty Act, which includes provisions against toxic contamination.

Some observed SSCs such as monarch butterflies (*Danaus plexippus)* and chaparral ragwort (*Seneco aphanactis)* are presumed to be present, while fragrant fritillary (*Fritillaria liliacea*) are presumed to no longer be present on Mare Island (local extinction). There have been no observations of these species within a half mile of the project site in the CNDDB.

In addition to the species noted as threatened or endangered above, a search of the CNDDB indicated the following species were identified within half a mile of the project area, but are not federal or state listed:

- *Sorex ornatus sinuosus*, the Suisun shrew
- *Melospiza melodia samuelis*, the San Pablo song sparrow.

Regulatory Requirements

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

Clean Water Act
The Clean Water Act (CWA) is the primary federal law created to protect the chemical, physical and biological integrity of Waters of the United States. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. CWA Section 404 requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into Waters of the United States. CWA Section 401 requires projects with a USACE permit for discharge of dredged or fill material must also obtain a water quality certification from the regional water quality control board indicating that the action would uphold state water quality standards.

Migratory Bird Treaty Act
The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and regulates the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Title 50 of the Code of Federal Regulations, Section 10.13 lists more than 800 species of birds, which includes most species native to the United States.

Coastal Zone Management Act
The Coastal Zone Management Act (CZMA) established in 1972 and administered by NOAA's Office of Ocean and Coastal Resource Management, to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." It provides for management of the nation's coastal resources through a state and federal partnership. The San Francisco Bay Conservation and Development Commission (BCDC) is the State's coastal zone management agency responsible for consistency determinations under Section 307 of CZMA. The San Francisco Bay Plan (Bay Plan) contains the policies that the BCDC uses to determine whether permit applications can be approved for projects within the BCDC's jurisdiction, which include San Francisco Bay, adjacent bays and waterways connected hydrologically to the Bay, managed wetlands and land within 100 feet of these areas.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
Commonly known as Superfund, CERCLA was enacted by Congress on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List. CERCLA was amended by the Superfund Amendments and Reauthorization Act on October 17, 1986.

CERCLA response actions are exempted by law from the requirement to obtain Federal, State or local permits related to any activities conducted completely on-site. However, CERCLA requires that on-site remedial actions must attain or waive Federal and more stringent State applicable or relevant and appropriate requirements (ARARs) for environmental protection.

The *Memorandum of Understanding Between the U.S. Environmental Protection Agency and the U.S. Department of Defense* establishes EPA as the lead agency for CERCLA projects on Department of Defense cleanup projects, e.g. naval bases.

The *Federal Facility Site Remediation Agreement for Mare Island Naval Shipyard* (September 29, 1992) is an agreement between the Navy and the State of California in regards the cleanup of the Mare Island Naval Shipyard. It also established that DTSC is the lead agency and the Regional Water Quality Control Agency is a support agency

STATE PLANS, POLICIES, REGULATIONS, AND LAWS

California Endangered Species Act (CESA)
CESA provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the California Department of Fish and Wildlife (CDFW), and prohibits the taking of such species without its authorization. CESA also provides protection for those species that are designated as candidates for threatened or endangered listings. CESA designates CDFW with the responsibility for maintaining the list of threatened species and endangered species. CDFW also maintains a list of candidate species, which are species under review for addition to the threatened or endangered

species lists, and a list of Species of Special Concern which is a watch list. Per CESA, a lead agency reviewing a proposed project must determine whether any state-listed endangered or threatened species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may affect a candidate species. CESA also requires a permit to take a state-listed species through incidental or otherwise lawful activities.

California Native Plant Protection Act
This Act is intended to preserve, protect, and enhance endangered or rare native plants in California. This Act includes provisions that prohibit the taking of listed rare or endangered plants from the wild and a salvage requirement for landowners. The Act directs the CDFW to establish criteria for determining what native plants are rare or endangered. The Act defines a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered. The Act also directs the Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

Porter Cologne Water Quality Act
The Porter-Cologne Water Quality Control Act protects California waters. The Act gives the San Francisco Bay Regional Water Quality Control Board, the authority to regulate discharges of waste, including dredged or fill material, to any state waters within its jurisdiction. Biological beneficial uses of state waters are subject to conditions attached to the certification of federal Clean Water Act (Section 401) authorizations.

McAteer-Petris Act
In 1965, the McAteer-Petris Act established the San Francisco Bay Conservation and Development Commission (BCDC), mandated its study of the San Francisco Bay and the submittal of a final report to the California Legislature. The San Francisco Bay Plan was completed and adopted by the BCDC in 1968 and submitted to the California Legislature in 1969. The Act requires that any person or governmental agency wishing to place fill in, or to extract materials exceeding $20 in value from, or make any substantial change in use of any land, water, or structure within the area of BCDC's jurisdiction must secure a permit. The Act provides that BCDC shall grant a permit if it finds that the project is either: (1) necessary to the health, safety, or welfare of the public in the entire Bay Area; or (2) consistent with the provision of Act and with the applicable provisions of the San Francisco Bay Plan.

REGIONAL AND LOCAL PLANS, POLICIES, REGULATIONS AND ORDINANCES

Mare Island Specific Plan
In 1994, City of Vallejo adopted the Reuse Plan, to facilitate reuse, leasing, and property transfers of the Mare Island Naval Shipyard. The City incorporated the Reuse Plan into the Specific Plan in 1999, amended it in 2005 to provide a level of analysis of physical conditions and of current economic considerations to serve as the zoning and Planned Development Master Plan for Mare Island, consistent with the Vallejo General Plan. The Specific Plan references consent agreements between the City, DTSC and the Navy regarding the cleanup of contaminated sites.

San Francisco Bay Plan
Created in 1968 after three years of study, the San Francisco Bay Plan (Bay Plan) is a strategic plan that identifies priority uses for the San Francisco Bay and its shoreline, and includes findings and policies related to the conservation of habitats and features of particular importance. The Bay Plan contains the policies that the BCDC uses to determine whether permit applications can be approved for projects within the BCDC's jurisdiction, which include San Francisco Bay, adjacent bays and waterways connected hydrologically to the Bay, managed wetlands and land within 100 feet of these areas.

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 Wildlife or U.S. Fish and Wildlife Service.

   Impact Analysis:

   As described above, one of the onsite excavation activities will be conducted in a wetland habitat area. Subarea 6 is a tidal wetland area of coastal salt marsh vegetation, that abuts the Mare Island Strait. Candidate, sensitive, or special-status species are likely to be present in the Subarea 6 cleanup location. Although unlikely, some special status species may be in proximity to the upland areas in Subareas 4 and 5. The following is an analysis of the project impacts to special status species likely present in remediation areas.

Salt Marsh Harvest Mouse

The remediation activities in the coastal salt marsh, Subarea 6, will temporarily impact salt marsh harvest mouse (SMHM) habitat. DTSC consulted with the California Department of Fish and Wildlife (CDFW) on mitigation measures to reduce impacts to the salt marsh harvest mouse below an incidental taking. In accordance with information provided by the CDFW in the *Biological Avoidance, Minimization and Mitigation Measures for Mare Island Site IA F1* report, DTSC developed the following list of Applicable or Relevant and Appropriate Requirements (ARARs) (See Attachment D Table 1: Applicable or Relevant and Appropriate Requirements) that are to be implemented during and after project construction.

ARAR-1. Biological resource education program.

A U.S. Navy contracted biologist (approved by the U.S. Fish and Wildlife Service [USFWS] and CDFW-OSPR) will conduct a Biological Resource Education Program briefing to all contractor and subcontractor personnel prior to entry to the IA F1. The biologist will be experienced with and knowledgeable about the salt marsh harvest mouse (SMHM), rails, rare plants, and birds protected by the Migratory Bird Treaty Act (MBTA). This briefing will review sensitive biological resources (e.g., SMHM, jurisdictional wetlands, etc.) within the work area and will identify all protection measures to be implemented to comply with the applicable State and Federal Applicable or Relevant and Appropriate Requirements. New employees will attend a briefing by the biological monitor prior to participating in work activities.

ARAR-2. Coastal salt marsh vegetation removal procedures.

Coastal salt marsh wetlands vegetation will be removed under the supervision of a USFWS and CDFW-OSPR approved biologist who will survey the areas for SMHM, rails, rare plants, and birds protected by the MBTA prior to vegetation removal. If a mouse of any species is observed within the areas being removed of vegetation, the USFWS and CDFW-OSPR will be notified. Unless otherwise approved by the USFWS and CDFW-OSPR, the mouse shall be left alone and allowed to move out of the area on its own volition. Vegetation removal may begin when no mice are observed. If vegetation removal is in the 50-foot buffer zone, it will start at the edge farthest from the salt marsh and work its way towards the salt marsh. This method of removal provides cover for SMHM and allows SMHM to move towards the salt marsh on its own volition as vegetation is removed. Coastal salt marsh wetlands and any vegetation which needs to be removed within a 50-foot buffer around the coastal salt marsh wetlands will be removed using hand tools only. Motorized equipment, such as bulldozers, will not be used within the wetlands or 50-foot buffer. Motorized hand tools, such as chainsaws, can be used to clear brush from the wetland and buffer. A biological monitor will be present during removal of vegetation within 50 feet of coastal salt marsh wetlands. Non-handheld equipment will be limited to the areas where the vegetation has been cut. Personnel may walk into coastal salt marsh wetlands accompanied by the biologist.

ARAR-3. Silt fence installation and maintenance.

Salt marsh harvest mouse exclusion fencing must be installed between areas of coast marsh wetlands and work sites immediately following vegetation removal to prevent entry of salt marsh harvest mice into cleared areas. All supports for the exclusion fencing must be placed on the inside of the work area to prevent salt marsh harvest mice from climbing the stakes into the work area. The salt marsh harvest mouse-proof exclusion fencing must be at least two feet high but no higher than four feet. The fencing must be made of a heavy plastic sheeting material that is too smooth for salt marsh harvest mice to climb. A four-foot buffer will be maintained free of vegetation around the exclusion fencing and work areas. The fencing must be trenched into the ground and backfilled to prevent salt marsh harvest mice from moving underneath the fencing. The final design and proposed location of the fencing must be reviewed and approved by the USFWS and CDFW-OSPR prior to being installed.

The biological monitor will have the authority to make field adjustments to the location of the fencing depending on site-specific habitat conditions. A qualified biologist must inspect fencing periodically during the work day to ensure that it remains an effective barrier to prevent entry of salt marsh harvest mice into work areas. If the biologist determines that the fencing needs repairs, they will direct the construction manager of the repairs to be made. Construction crews must maintain the fencing as needed throughout the work period, including the habitat restoration work. All necessary repairs to the fencing must be completed within 24 hours of the initial observance of the damage. Work will not continue until the fences are repaired and the site is inspected by a qualified biologist to ensure that salt marsh harvest mice have not entered the work area

ARAR-4. Biological monitor responsibilities.

A qualified biologist approved by the USFWS and CDFW-OSPR will be present onsite to monitor for SMHM (and rails, rare plants, and birds protected by the MBTA) during all work activities in potential habitat areas. The biologist monitor will:

- Observe work periodically within the adjacent upland areas;
- Inspect the work area and adjacent habitat areas to determine presence of SMHM, rails, rare plants, or

MBTA birds;
- Remain onsite throughout the day while work activities are occurring in habitat areas;
- Coordinate appropriate avoidance and mitigation measures with USFWS and CDFW-OSPR if a rare plant species is observed;
- Have stop work authority if deemed necessary for any reason to protect SMHM (or any other State or Federal "Threatened or Endangered" or "Fully Protected" species, including rails, rare plants, and birds protected by the MBTA).

If a mouse of any species (or a rail, or rare plant species) is observed in the work area (i.e., in the immediate vicinity of an intrusive investigation), no work in the area of the observed species will be initiated, or the biologist will stop work immediately until the mouse (or rail) leaves the intrusive investigation area of its own volition and USFWS and CDFW-OSPR are notified. If the mouse or rail does not leave the intrusive investigation area, work would not be reinitiated until the USFWS and CDFW-OSPR are contacted and have made a decision on how to proceed with work activities. The biological monitor would direct the contractor on how to proceed accordingly.

ARAR-5. Biological monitor daily report.
The qualified biologist must complete a monitoring report for each day of monitoring, which includes: the date, location, biologist's name, remedial activities occurring, special status species observed, species behavior in relation to remedial activities, and any corrective measures taken to protect the species. The biological monitoring reports must be submitted to USFWS and CDFW-OSPR on a weekly basis for the duration of the remedial activities.

Black and Clapper Rail
The remediation activities in the coastal salt marsh, Subarea 6, may temporarily impact black and clapper rail habitat. The ARAR measures ARAR-1, ARAR-2, ARAR-4 and ARAR-5 described above, in addition to the ones listed below would reduce and minimize impacts to the black and clapper rails.

ARAR-6. Preconstruction Biological Survey for rails.
Protocol-level surveys for California clapper rails (i.e., four rounds of surveys conducted between mid-January and April) must be completed prior to any work occurring within or near suitable California clapper rail breeding habitat at Subarea 6 during the rail's February 1 - August 31 breeding season. No work will occur within suitable California clapper rail breeding habitat at Subarea 6 within 700 feet of a California clapper rail activity center (as determined by protocol-level surveys) during the rail's breeding season. The first round of protocol-level surveys must start prior to February 1 or any work at Subarea 6 will be delayed until September 1.

Rare Plants
The *Mare Island Production Manufacturing Area & South Shore Area Existing Site Conditions & Special Status Species* by H.T. Harvey & Associates is over 7 years old. CDFW recommended pre-construction biological surveys be conducted within a few weeks/days prior to the start of field work, during the appropriate times of year for identifying special status species. In addition, the rare plant surveys documented in this report were conducted on December 8, 2010 outside the blooming period for all the rare plant species potentially present on site and are therefore, inadequate for determining absence. Rare plant surveys should be conducted during the time year when species are evident and identifiable (i.e., blooming period) to be valid. Therefore, the following mitigation measure is provided on the recommendation of CDFW.

ARAR-7. Preconstruction Biological Surveys.
A qualified biologist who has been approved by the USFWS and CDFW-OSPR shall survey all access routes, staging, and storage areas, stockpile and dewatering areas, decontamination areas, and work areas prior to the start of any project activities, during the time of year when species are evident and identifiable.

If a special-status plant or stand of special-status plants is found, it will be flagged, and activities in the work area will be placed on hold pending further consultation with CDFW and USFWS. A copy of the preconstruction survey shall be submitted to CDFW, USFWS, and DTSC prior to project initiation.

Nesting Birds and Raptors
Northern harriers (*Circus cyaneus*) and white-tailed kites (*Elanus leucurus*) are assumed to be present within or adjacent to Subarea 4, 5 and 6 project areas. The proposed nesting remediation activities may disturb nesting birds. CDFW provided *Biological Avoidance, Minimization and Mitigation Measures for Mare Island Site IA F1* which have been incorporated into the following Remedial Action Plan ARAR measure.

ARAR-8. Monitoring During Protected Species Nesting Season.

If site work will be conducted between the dates of February 1 and September 15, a qualified biologist will conduct a visual inspection of the site (all staging and storage areas, transportation routes, work areas, and soil stockpile areas) for protected nesting birds within a reasonable time prior to commencement of any project activities. If work is stopped for more than a reasonable time as determined by the qualified biologist during the protected species nesting season, the Project Site will be reassessed before a return to work activities. The site biological monitor will inspect the work area and natural habitats occurring within a reasonable distance (250 feet) of the work area to identify active nests of protected species. If no active nests of protected species are found, no further mitigation will be conducted. The qualified biologist shall look for new nests at least twice per week during remedial activities during the nesting season.

If protected nesting birds are found during visual inspections, USFWS and CDFW-OSPR will be notified and the Navy will coordinate with the USFWS and CDFW-OSPR to assess appropriate avoidance and mitigation measures. If vegetation containing protected nesting birds must be removed during nesting season (February 1-September 15) as a result of project implementation, the Navy will coordinate with both the USFWS and CDFW-OSPR to assess appropriate avoidance or mitigation measures.

If a qualified biologist in coordination with the USFWS and CDFW-OSPR determines the project activity will not be likely to adversely affect the active nest, the project may proceed. The qualified biologist will monitor the activity of the protected nesting birds (including rails or birds protected by the MBTA) during work activities. If the birds behave normally, the biologist will monitor them twice per week to ensure the status has not changed. If the birds change their behavior as a result of work activities, the biologist will continue to monitor the birds as work is modified to avoid disturbance to birds until the birds act normally. The biologist will then monitor the birds twice per week to ensure the status has not changed.

Fish

March 2017 surveys by CDFW detected Delta smelt and longfin smelt in the Napa River / Mare Island Strait. To protect smelt during remediation activities, the following mitigation measures are proposed:

ARAR-9. Operations, Equipment, and Personnel

Excavation activities within or adjacent to wetland habitat will not be conducted two hours before and after extreme high tides (6.5 feet above mean lower low water [MLLW]), measured at the Golden Gate Bridge. Excavation and haul equipment will be confined to the access routes, designated staging areas and designated excavation areas. Upland routes covered with pavement, bare ground, or non-native vegetation will be utilized as access routes to and from the intrusive investigations, to the maximum extent practicable. The equipment decontamination area will be located in the designated upland staging area away from any wetlands habitat.

ARAR-10. Protection measures for fish species and riparian habitats.

If this project conducts in-water excavation activities, they must occur within the in-water work windows (after August 1 and before October 15) established by the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife (CDFW). To avoid impacts to critical life stages of these species, all in-water excavation, including the placement and removal of water quality protections (e.g., silt curtains), shall occur after August 1 and before October 15. Prior to in-water work beginning, a silt curtain shall be installed to exclude fish (including Sacramento splittail) from the work area and to protect water quality. The silt curtain shall be placed around the work area in the river prior to sediment excavation. The suspension of any sediment within the work zone shall be contained by the silt curtain, protecting water quality and aquatic species.

Candidate, sensitive, or special-status species are likely to be present in the Subarea 6 cleanup location. While remediation of Subarea 6 is being performed, a biologist would be present onsite to ensure proper vegetation removal, dig techniques, and area management procedures are implemented to minimize habitat damage outside of the excavation area. Silt fencing will be installed between the wetland areas surrounding the excavation to prevent entry of the salt marsh harvest mouse into the area before excavation and to prevent the migration of sediment and contaminated sediment from the construction area. Sediment will be used to backfill the excavated area within the wetland and graded to the original elevation. Upon completing site remediation activities and subsequent backfill within the wetland, the site will be restored and the excavation area will be revegetated to support SMHM habitat. The restoration will include hand transplanting of pickleweed from clean donor areas. Monitoring and evaluation of the habitat recovery may be performed to assure successful revegetation of the disturbed area.

Project controls would be implemented to avoid releases of soil/chemicals from upland remediation activities into wetland habitat within and adjacent to the project site. For excavation activities, these would include BMPs for sediment and erosion control and dust control mitigation if necessary. Dust monitoring will be implemented to ensure workers and sensitive habitats are not exposed to fugitive dust with contaminants. Dust monitoring will be done using

direct read instrumentation both within and adjacent to the work area. Best management practices to control dust will also be implemented, including wetting and covering exposed soil, street sweeping and vehicle and equipment cleaning. Standard erosion controls such as covering excavated soil piles with plastic liner, straw wattle, perimeter silt fence, fiber rolls, sandbags, storm drain protection and a soil stockpile management plan will be implemented to limit runoff from the project area. This will limit exposure of sensitive species and habitats to contaminated runoff. Dewatering of excavations and partially backfilling excavations with clean material at the end of each work day will also limit groundwater accumulation and thus limit exposure of sensitive habitat and SSCs to contaminated groundwater. Therefore, excavation to remove contaminated soil would not be likely to affect candidate, sensitive, or special-status species.

Transport of materials removed from the site or imported to the site during project implementation would occur on existing roadways, and disposal would occur at existing facilities that are licensed for accepting waste. Therefore, transportation and disposal activities similarly would not be likely to affect candidate, sensitive, or special-status species.

Implementation of the ARAR measures will ensure project activities will not have a significant adverse impact on any species candidate, sensitive, or special status species.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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 Wildlife or U.S. Fish and Wildlife Service.

Impact Analysis:

Coastal Salt Marsh

As stated previously, the remediation of Subarea 6 involves the clearing of 38,350 square feet coastal salt marsh vegetation and excavation of contaminated sediment from a 9-acre contiguous tidal wetland or 9.8% will be impacted. The remediation activities in Subarea 6 may impact salt marsh harvest mice, black rails, clapper rails and rare plant species as discussed in the previous biological impact discussion.

Under the Porter Cologne Water Quality Act, the San Francisco Bay Regional Water Quality Control Board (RWQCB) has the authority to regulate discharges of waste, including dredged or fill material, into any state waters within its jurisdiction, including the Mare Island Strait. In addition, the RWQCB reviews the biological beneficial uses of state waters as conditions to the certification of federal Clean Water Act (Section 401) authorizations. The San Francisco Bay Regional Water Quality Control Board (RWQCB) has the authority to regulate discharges of waste, including dredged or fill material, into any state waters within its jurisdiction, including the Mare Island Strait. In addition, the RWQCB reviews the biological beneficial uses of state waters as conditions to the certification of federal Clean Water Act (Section 401) authorizations.

The *Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California* by the U.S Fish and Wildlife Service (USFWS 2013) features five endangered species: two endangered animals, California clapper rail (*Rallus longirostris obsoletus*) and salt marsh harvest mouse (*Reithrodontomys raviventris*) and three endangered plants, Suisun thistle (*Cirsium hydrophilum var. hydrophilum*), soft bird's-beak (*Chloropyron molle ssp. Molle*), and California sea-blite (*Suaeda californica*). The biology of these species is at the core of the recovery plan, but the goal of this effort is the comprehensive restoration and management of tidal marsh ecosystems. This recovery plan is an expansion and revision of *The California Clapper Rail and Salt Marsh Harvest Mouse Recovery Plan* (U.S. Fish and Wildlife Service 1984).

The Recovery Plan includes reasons for decline and threats for survival of the salt marsh harvest mouse including, loss of habitat, predation and chemical contaminants. Loss of habitat includes the removal of coastal salt marsh vegetation, filling and invasion of non-native vegetation. The remediation of Subarea 6 involves the clearing of 38,350 square feet coastal salt marsh vegetation, excavation, backfilling and vegetative restoration within six months. The

excavation is planned to be 2.5 feet below existing grade to improve unacceptable risks to ecological receptors that may result from barium, copper, molybdenum, and zinc exposure (Trevet 2015).

DTSC consulted with the California Department of Fish and Wildlife (CDFW) to identify methods to reduce impacts to the salt marsh harvest mouse. CDFW provided Biological Avoidance, Minimization and Mitigation Measures for Mare Island Site IA F1 which have been incorporated into the RAP and following measure for the remediation impacts within Subarea 6.

ARAR -11. Subarea 6, coastal salt marsh wetland restoration and compensatory mitigation.

The portions of the coastal salt marsh wetlands within IA F1 that are temporarily affected by the proposed action must be restored to coastal salt marsh wetlands habitat for the SMHM and may require compensatory mitigation. Wetland vegetation within the wetlands disturbed by remediation work must be approved by USACE, RWQCB and CDFW. The restoration requirements include:

- Develop a detailed restoration plan by a qualified restoration ecologist.
- Backfill excavated areas with clean sediment material and recontouring the excavated areas to elevations that provide hydrologic conditions sufficient to support re-establishment of coastal salt marsh wetlands. Grading as necessary to maintain existing hydrologic conditions.
- Revegetate with pickleweed cuttings harvested and rooted from Subarea 6 prior to vegetation clearing activities. Harvesting pickleweed cuttings from adjacent undisturbed coastal salt marsh wetlands areas requires: delineating locations on a map or plan, staking of locations by the biological monitor and approval by regulatory agencies (USFWS and CDFW) prior to the initiation of harvesting activities. Pickleweed cuttings will be collected by crews on foot and using non-motorized hand tools. No disturbance to coastal salt marsh wetlands areas outside of the designated harvest areas will be permitted. Harvesting activities will take place such that existing pickleweed cover in the harvest areas will not be reduced by more than 30 percent.
- Remove and maintain invasive plant species less than 5%,
- Monitor restoration annually for five years, or until vegetative performance criteria have been met and suitable salt marsh harvest mouse habitat has been re-established. The pickleweed collection/harvest will be assessed immediately prior to the initiation of harvesting to determine pre-harvest vegetative cover and will be monitored after harvesting to ensure that the areas return to pre-harvest pickleweed cover within five years.
- Achieving performance criteria at the end of five years would be a minimum of 90 percent cover of native wetland plant species [e.g., pickleweed (Sarcocornia pacifica), saltgrass (Distichlis spicata), fat hen (Atriplex triangularis), alkali heath (Frankenia salina)] with a minimum of 60 percent cover of pickleweed, and less than five percent cover of non-native plant species.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
Project activities performed in the upland areas of Subarea 4 and Subarea 5 would be conducted on developed areas with commercial and industrial uses. The closest surface waterbody to the cleanup sites is Mare Island Strait. The limit of disturbance for the excavation proposed for Subarea 5, the upland excavation closest to Mare Island Strait, is approximately 220 feet from the shoreline. The shoreline at this point has been developed with buildings and buttressed with rip-rap. The buildings in this area are currently not used. Subarea 4 is the upland project area closest to the wetlands which are located approximately 400 feet directly east of the excavation site. The wetlands have been recently mapped under the USFWS National Wetlands Inventory (NWI, USFWS 2016). Removal actions and site restoration activities within the two upland areas would occur in developed, non-wetland areas. Transport of materials removed from the site or imported to the site during project implementation would occur on existing roadways, and disposal would occur at appropriately permitted landfills. Fugitive dust or contaminated soil would be controlled

through standard BMPs, and uncontrolled off-site migration would not be allowed. Therefore, remediation activities in upland areas will have no impacts to any federally protected wetlands are anticipated or planned. See also response to item a and b above, regarding the ARAR measures that would be implemented to avoid soil/chemical migration to the adjacent wetland and Mare Island Strait.

As stated previously, the remediation of Subarea 6 involves the clearing of 38,350 square feet coastal salt marsh vegetation and excavation of contaminated sediment from a tidal wetland that is adjacent to Mare Island Strait. The remediation involves the excavation, filling and restoration of coastal salt marsh vegetation within six months. The excavation is planned to be 2.5 feet below existing grade to improve unacceptable risks to ecological receptors that may result from barium, copper, molybdenum, and zinc exposure (Trevet 2015). However, the excavation may need to be deeper and wider based on confirmation sampling taken following the planned excavation. Silt fencing will be installed between the wetland areas surrounding the excavation to prevent off-site transport of re-suspended sediment and prevent entry of the salt marsh harvest mouse into the area.

Upon completing excavation of contaminated sediment, the excavation will be backfilled with sediment and graded to the elevation that preceded the remedial activities. Following backfill of the excavation, the wetland will be revegetated to support SMHM habitat (Trevet 2015). The mitigation measures listed previously in items a. and b. will be implemented to minimize impacts to the tidal wetland and Mare Island Strait. The impacts to federal wetlands are temporary and will be restored with long-term monitoring. CERCLA response actions are exempted by law from the requirement to obtain Federal, State or local permits related to any activities conducted completely on-site, so a Clean Water Act Section 404 from the U.S. Army Corps of Engineers is not required.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
The excavation in Subarea 6 would be short-term (less than 6 months) and would be performed in an existing wetland along the western shoreline of Mare Island Strait. Wildlife is likely to be present in the Subarea 6 cleanup location. While remediation of Subarea 6 is performed, a biologist will be present onsite to ensure proper vegetation removal, dig techniques, and area management procedures are implemented to avoid habitat damage outside of the excavation area. Silt fencing will be installed between the wetland areas surrounding the excavation to prevent entry of the salt marsh harvest mouse into the area before excavation. Upon completing site remediation activities and subsequent backfill within the wetland, the site will be restored and the excavation area will be revegetated to support SMHM habitat. The restoration will include hand transplanting of pickleweed from clean donor areas. Monitoring and evaluation of the habitat recovery may be performed to assure successful revegetation of the disturbed area (Trevet 2015). With habitat remediation, the proposed activities within Subarea 6 are expected to result in no long-term effect to migration or movement of fish or wildlife species.

All upland project activities would be conducted on previously developed land areas with historic commercial or industrial uses. Although wildlife species are known to reside or migrate within the project boundaries, the areas that would be disturbed by the project are minimal in size and will have little impact. No areas within the project boundaries are known to contain any migratory wildlife corridors (TtEMI 2002a-b, CDFW BIOS 2016). See also response to Item a., above, regarding the measures that would be implemented to avoid soil/chemical migration to the adjacent Mare Island Strait, which could interfere with movement of native resident or migratory fish or wildlife species.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
The remedial activities for Subarea 6 would be performed in a coastal salt marsh wetland. The wetland is characterized by pickleweed vegetation, and provides habitat for the salt marsh harvest mouse, a federally and state listed species. A Memorandum of Understanding has been established with USFWS to promote the conservation of the salt marsh harvest mouse within the confines of the former Mare Island Naval Shipyard (USFWS 1988). While soil remediation of Subarea 6 is being performed, a biologist will be present onsite to ensure proper vegetation removal, dig techniques, and area management procedures are implemented to minimize habitat damage outside of the excavation area. Silt fencing will be installed between the wetland areas surrounding the excavation to control sediment movement and prevent entry of the salt marsh harvest mouse into the area. Upon completing site remediation activities and subsequent backfill within the wetland, the site will be restored and the excavation area will be revegetated to support SMHM habitat. The restoration will include hand transplanting of pickleweed from clean donor areas. Monitoring and evaluation of the habitat recovery may be performed to assure successful revegetation of the disturbed area (Trevet 2015).

The project sites within the upland area, Subarea 4 and Subarea 5, provide minimal biological habitat since these areas are entirely developed and covered by roadways, parking areas, or buildings. The only applicable preservation policies or ordinances are for the wetland area on the eastern edge of the site. The proposed project activities within the upland remediation areas would not conflict with the Memorandum of Understanding between the USFWS and the Navy because of the precautions discussed in (a) to protect SSCs such as the salt marsh harvest mouse (TtEMI 2002a, TriEcoTt 2014). Implementation of best management practices, including dust, groundwater and runoff controls as discussed in (a) above would prevent contaminated dust or groundwater from affecting sensitive habitat such as the non-tidal wetland.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:

San Francisco Bay Plan
The San Francisco Bay Conservation and Development Commission (BCDC) through its coastal management program, has jurisdiction over the San Francisco Bay segment of the California coastal zone. BCDC's coastal management program as it applies to the Site is based on the provisions and policies of the McAteer-Petris Act and the Bay Plan, as well as BCDC's administrative regulations.

Pursuant to the McAteer-Petris Act, BCDC has designated certain areas within the 100-foot shoreline band for specific priority uses including ports, water-related industry, water-oriented recreation, airports, and wildlife refuges. BCDC has authority to grant or deny permits for development or other actions within the priority use areas based on Bay Plan policies pertaining to the priority use. A project that uses dredged material to create, restore, or enhance bay or certain waterway natural resources should be approved only if dredged material would not be placed in areas with particularly high or rare existing natural resource values, such as eelgrass beds and tidal marsh and mudflats, unless the material would be needed to protect or enhance the habitat.

Subareas 4 and 5 are more than 100 feet from the Napa River / Mare Island Strait shoreline and therefore are not subject to BCDC's jurisdiction. Subarea 6 is within the 100-foot jurisdiction and is subject to review by BCDC for the following activities:

- Extraction of sand, mud, or other materials from San Francisco Bay, its tributaries, the delta, or coastal state waters.
- Disposal of dredged sediment extracted from the Bay.
- Placing fill in the Bay or in certain tributaries of the Bay.

Subarea 6 is 38,350 square feet of tidally influenced coastal salt marsh. The remediation of Subarea 6 involves the excavation, filling and restoration of coastal salt marsh vegetation within six months. The excavation is planned to be 2.5 feet below existing grade to improve unacceptable risks to ecological receptors that may result from lead, copper, and zinc exposure (Trevet 2015). The excavation may need to be deeper and wider based on sampling taken during excavation. The approximately 3,600 cubic yards of contaminated sediment will be transported to the Altamont Landfill in Livermore, California. Per the McAteer-Petris Act, the extracted materials are not worth more than $20, but will actually cost the U.S. Navy more due to the expense of excavation, transportation and disposal fees. Silt fencing will be installed between the wetland areas surrounding the excavation to prevent off-site transport of re-suspended sediment and prevent entry of the salt marsh harvest mouse into the area.

Sediment will be used to backfill the excavated area within the wetland and graded to the original elevation. Upon completing site remediation activities and subsequent backfill within the wetland, the site will be restored the excavation area will be revegetated to support SMHM habitat. The restoration will include hand transplanting of pickleweed from clean donor areas. The remediation and restoration of Subarea 6 will remove environmental contaminants and will not conflict with the policies of the McAteer-Petris Act and the Bay Plan. In addition, CERCLA response actions are exempted by law from the requirement to obtain Federal, State or local permits related to any activities conducted completely on-site.

City of Vallejo Mare Island Specific Plan

The Specific Plan incorporated the Reuse Plan, to facilitate reuse, leasing, and property transfers of the Mare Island Naval Shipyard. The Specific Plan delineates reuse areas and defines their future uses. The proposed remediation activities in Subareas 4, 5 and 6 occur within Reuse Area 10A, South Island Business Park. The General Plan Designations for Reuse Area 10A are Commercial Waterfront (Subareas 4 and 5) and Open Space-Wetlands (Subarea 6). Sections 3.5.13 and 4.10.13 state that the South Island Business Park will be owned by the State Lands Commission. After environmental clean-up is complete, this reuse area will be leased to the City of Vallejo for sub-lease to the Master Developer for development consistent with the use restrictions imposed by the State Lands Commission (Lennar Mare Island, LLC.). Per Sections 3.4.3 and 3.5.13 of the Specific Plan, the eastern portion of the Reuse Area 10A consists of wetlands that are intended as a protected habitat area and delineated as Open Space-Wetlands, Wildlife Refuge and a 9-acre conservation easement. The Specific Plan references consent agreements between the City, DTSC and the Navy for the environmental cleanup of contaminated sites.

The proposed Subareas 4, 5 and 6 remediation activities are in-compliance with the Mare Island Specific Plan. The impacts to the coastal salt marsh tidal wetland in the Open Space-Wetlands, Wildlife Refuge and a 9-acre conservation easement are temporary. DTSC consulted with the State Lands Commission that stated the U.S. Navy still owns the parcel and the conservation easement has not been recorded. In addition, CERCLA response actions are exempted by law from the requirement to obtain Federal, State or local permits related to any activities conducted completely on-site.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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5. Cultural Resources

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of concrete and contaminated soil 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, concrete, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas and repaving previously hardscaped surfaces.

Description of Baseline Environmental Conditions:

Mare Island is a National Historic Landmark and contains several National Register Historic Districts (Navy 1994). The State of California recognized the historic importance of Mare Island in 1960 by officially declaring it a California Historic Landmark. It was later declared a National Historic Landmark in 1975 by the Secretary of the Interior under the Historic Sites Act of 1935.

The 980-acre Mare Island Historic District is listed in the National Register of Historic Places (NRHP). The Mare Island Historic District defines an area of the island that was used by the Navy between the establishment of the base in 1854 and the end of World War II in 1945. The boundaries for the historic district encompass the majority of buildings, structures, and sites that potentially contribute to the area of significance (military history, industrial history, architecture and engineering, and historic archaeology) and to the period of significance (1845 to 1945). The Mare Island Historic District includes 661 buildings and structures, 502 of which are contributing elements and 12 of which are historic landscape areas. In addition, it includes one historic archaeological site comprising a minimum of 28 discrete features, all of which contribute to the significance of the district. The Mare Island Historic District includes all elements of the National Historic Landmarks, including the 49 buildings and structures included as National Historic Landmark properties (WESTDIV and City of Vallejo 1998).

To comply with the requirements of the National Historic Preservation Act, the Navy consulted with the California State Historic Preservation Officer, Advisory Council on Historic Preservation, and the City of Vallejo to identify ways to avoid or mitigate adverse effects to historic properties associated with the transfer of land from the Navy to a non-federal entity (WESTDIV and City of Vallejo 1998). This consultation resulted in the execution of a Memorandum of Agreement in 1997. With the transfer of historic properties from the Navy to a non-federal entity, federal control ceases and undertakings affecting the properties are subsequently administered by City codes and ordinances. The Memorandum of Agreement requires that the City of Vallejo amend its Architectural Heritage and Historic Preservation Ordinance (Chapter 16.38 of the Vallejo Municipal Code) to match federal regulations specifically identified areas at Mare Island. The project sites evaluated in this Initial Study are not near these buildings.

Several studies have been performed at Mare Island to identify areas where historical and archaeological resources are located, as recorded in several reports (WESTDIV and City of Vallejo 1998, TtEMI 2002a). Several areas of both prehistoric and historic archaeological interest were identified and characterized by the discovery of pieces of obsidian and chert, a pestle and mano, and shellfish remains in the old magazine area. In addition, several other shellmound (midden) sites indicative of Native American occupation were identified. Possible Native American sites that may lie below some developed portions of Mare Island were also identified (Navy 1994). All buildings at Mare Island were evaluated for historical significance. Multiple buildings of of historic significance were identified within the project area and two are adjacent to excavation areas.

The Mare Island Specific Plan (City of Vallejo 2005) identifies areas of Mare Island designated as a National Historic Landmark, National Register of Historic Places Historic District, California State Historical Landmark, California Register of Historical Resources and the City of Vallejo Historic District and City Landmark Designation. The cleanup action performed in Subarea 5 would occur near or within known historic resources identified in the Mare Island Specific Plan.

The proposed excavation within Subarea 4 will be performed on the southeast side of Building A75 (see Photograph 5-1). The proposed excavation will remove soil to a depth of 2.5 feet below ground surface (bgs). The completed excavation will be backfilled with clean, imported soil. The excavation and subsequent backfill will be performed with heavy equipment such as excavators. Caution will be exercised when performing these activities to avoid any inadvertent impact to cultural or biological resources. It is thus unlikely that any structural or cosmetic impacts to Building A75 will occur. Furthermore, Building A75 was not identified as a historic resource in previous studies.

The proposed excavation within Subarea 5 will be performed on the northeast, southeast, and southwest sides of Building A17 (see Photograph 5-2). Building A17 was identified as a historic resource (WESTDIV and City of Vallejo 1998). The proposed excavation will remove soil to a depth of 2.5 feet bgs. The completed excavation will be backfilled with clean, imported soil. The excavation and subsequent backfill will be performed with heavy equipment such as excavators. Caution will be exercised when performing these activities. It is thus unlikely that any structural or cosmetic impacts to Building A17 will occur.

The proposed excavation with Subarea 6 will be performed on the northeast side of Building A223. Building A17 was identified as a historic resource (WESTDIV and City of Vallejo 1998). The proposed excavation will remove soil to a depth of 2.5 feet bgs. The completed excavation will be backfilled with clean, imported sediment. The excavation and subsequent backfill will be performed with heavy equipment such as excavators. Caution will be exercised when performing these activities to avoid disturbing Building A223; therefore, it is thus unlikely that any structural or cosmetic impacts to Building A223 will occur.

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.

Impact Analysis:
Project activities do not involve modifications to structures identified to be historically significant. Project activities will not conflict with the Architectural Heritage and Historic Preservation Ordinance (Chapter 16.38 of the Vallejo Municipal Code). The Vallejo Municipal Code requires modification to historic buildings be made in conformance with the Secretary of the Interior's standards for rehabilitation and guidelines for rehabilitating historic buildings. Chapter 16.38 requires issuance of a certificate of appropriateness for alteration of a contributing resource in a manner that affects the exterior architectural appearance of a building or structure. A certificate of appropriateness is also required for construction or alteration within the project site of a contributing resource of site features including, but not limited to, landscaping, fencing, walls, paving, and grading. Although, the proposed excavation activities in Subarea 5 and Subarea 6 would occur near designated historical resources, a certificate of appropriateness is not required for this project. As discussed above, proposed remediation activities adjacent to Building A75, A17, and A223 will be limited in depth, which would be highly unlikely to damage any of the three buildings.

Construction activities that disturb surface and subsurface soils have the potential to impact historical resources. The Mare Island Specific Plan (City of Vallejo 2005) identifies areas of Mare Island designated as a National Historic Landmark, National Register of Historic Places Historic District, California State Historical Landmark, California Register of Historical Resources and the City of Vallejo Historic District and City Landmark Designation. None of the cleanup actions evaluated in this Initial Study would occur near or within known historic resources identified in the Mare Island Specific Plan.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5.

Impact Analysis:
No archaeological resources identified in the Mare Island Specific Plan are located within the proposed excavation areas. The closest identified archaeological resources, the F5 Stable Complex, F9 NAD Keeper's House, F14 NAD Watchman's House and a site of Prehistoric Archaeological Sensitivity are located more than 750 feet to the southeast of the nearest proposed excavation area and beyond the archaeological Area of Potential Effect (APE). Impacts to archaeological resources, if encountered, would likely be minimal. If such resources or features are identified during project activities, work in the immediate vicinity would stop, and archaeological experts would be consulted for an appropriate course of action. The cleanup activities are not likely to cause a substantial adverse impact to any archaeologically significant resource.

Conclusion:

☐ Potentially Significant Impact

☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis:
As discussed in the response to Item b., project activities involve the disturbance of soils, which could affect paleontological resources, if present. However, the soil underlying the project area is composed of dredge spoils or imported fill and has been disturbed. Additionally, these areas have been developed. Any paleontological resources located in these areas would have likely already been discovered or destroyed, so there will likely be no impact to paleontological resources as a result of the proposed activities. Furthermore, these sites are not located within areas known to contain paleontological resources or unique geologic features (TtEMI 2002a). If such resources or features are identified during project activities, work in the immediate vicinity would stop and paleontological experts would be consulted for an appropriate course of action.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis:
Work activities associated with this project are located outside areas where human remains have been previously identified. In the event that human remains are encountered during the execution of the proposed project, work in the immediate vicinity would stop, and the county coroner would be notified immediately, in accordance with applicable laws and regulations (specifically Health and Safety Code Section 7050.5). If the Coroner determines that the remains are Native American, the Native American Heritage Commission would be contacted. If Native American human remains or any associated grave goods are found, procedures would be implemented as required by the Native American Graves Protection and Repatriation Act Section 2(3), which requires work to be stopped in the area of the discovery.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

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TtEMI. 2002. Final Onshore Ecological Risk Assessment, Mare Island, Vallejo, California. July.
WESTDIV and City of Vallejo. 1998. Final Environmental Impact Statement/Environmental Impact Report for the Disposal and Reuse of Mare Island Naval Shipyard, Vallejo, California. April.

6. Energy

Project Activities Likely to Create an Impact:

- Mobilization of equipment and materials to and from site.
- Use of construction equipment to perform remedial activities.

Description of Baseline Environmental Conditions:

The State of California passed Assembly Bill 32 (AB 32) (the California Global Warming Solutions Act of 2006) which seeks to reduce energy use and GHG emissions. Other state regulations are intended to reduce energy use and GHG emissions. These include, among others, the California Code of Regulations Title 24, Part 11- California Green Building Standards (CALGreen). At the local level, the City of Vallejo adopted a Climate Action Plan in March 2012 as a roadmap to become a more sustainable community. Changes through 2035 include a focus on green building practices, energy efficiency, transit-oriented development, mixed use and higher density development, recycling and composting, water conservation, and renewable energy.

Analysis as to whether or not project activities would:

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

Impact Analysis: During remediation there would be a temporary consumption of energy resources for the use and movement of equipment and materials, but the duration is limited to six months or less. The Site is centrally located within an urban area; thus, enabling Navy contractors to source equipment locally with minimal energy expended to transport it. Contaminated soil and sediment excavated from the site will be transported to Altamont Landfill which is located 57 miles from the former MINS. Compliance with local, state, and federal regulations, which limit engine idling times would reduce short-term energy demand during the project to the extent feasible and the project would not result in a wasteful or inefficient use of energy. There are no unusual project characteristics that would require the use of equipment that would be more energy intensive than is used for comparable activities or use of equipment that would not conform to current emissions standards and related fuel efficiencies.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Due to the local availability of equipment, short duration of the project, and use of modern equipment that conforms to current emissions standards related fuel efficiencies, the project will not interfere with any state plans for renewable energy or energy efficiency or the City's Climate Action Plan.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

7. Geology and Soils

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of asphalt, concrete, and contaminated soil 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, asphalt, concrete, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas and repaving previously hardscaped surfaces.

Description of Baseline Environmental Conditions:

The geology of Mare Island can be characterized as an eroded bedrock surface that is exposed in the southern part of the peninsula, overlain by a blanket of unconsolidated Quaternary sediments and fill material (from dredge and upland sources) at most other locations. The bedrock surface is irregular and deeply incised in some areas, and up to 160 feet of unconsolidated materials overlies the bedrock at some locations on the peninsula. The eroded bedrock forms a subsurface ridge, estimated to be the original extent of Mare Island in 1859 (prior to being filled) that extends northwest along the axis of the Mare Island peninsula, with the approximate center of the ridge roughly coinciding with Azuar Drive. The northern extent of the subsurface bedrock ridge is not known, but the ridge is present at least as far north as A Street.

Three principal geologic units have been identified at Mare Island. From top to bottom, stratigraphically, these include (1) fill material, (2) unconsolidated natural deposits, and (3) bedrock. The artificial fill material is a heterogeneous unit consisting of clay, silt, sand, gravel, and debris in varying proportions. The unconsolidated natural deposits consist primarily of a thick sequence of silty clays commonly referred to as “Bay Mud.” The bedrock consists of sandstone, siltstone, and shale.

Unconsolidated Heterogeneous Material

As a result of extensive land reclamation activities at Mare Island, a highly heterogeneous surficial layer of fill material, also referred to as unconsolidated heterogeneous material, is prevalent at locations outside of the original outline of the island. The unconsolidated heterogeneous material at the project area is from imported sources and upland fill and consists of clay, silt, sand, railroad ties, and debris. Debris encountered includes metallic debris, concrete, wood, asphalt, rocks and aggregate. Fill material is characterized by abrupt and unpredictable changes in material in short lateral and vertical distances. This material is encountered at the project area from near ground surface to between 0.5 to 1 foot to a maximum of approximately 11.5 feet below ground surface. The fill material thins westward, toward the hilly area (the bedrock of the original island (ChaduxTt 2012).

Fine-grained Homogeneous Unconsolidated Material

Unconsolidated natural deposits overlie the eroded bedrock surface on much of Mare Island. This material is also referred to as fine-grained homogeneous unconsolidated material and corresponds with the Younger Bay Mud found in other areas of San Francisco Bay and consists of silty clay with organic materials. These deposits are encountered between from 7 or 9 feet below ground surface to at least 50 feet below ground surface (TriEcoTt 2014).

Bedrock

The bedrock at Mare Island consists of steeply dipping brown, orange, and tan arkosic sandstone, siltstone, and micaceous shale. Bedrock outcrops exist in the hilly area at the southern end of the peninsula that is now occupied by the golf course, ammunition bunkers, and a residential area along Mesa Avenue. The exposed bedrock at Mare Island is assigned to the undifferentiated Great Valley Sequence on Wagner and Bortungo’s regional geologic map (1982). A more detailed map prepared by Dibblee (1981) identifies the bedrock as arkosic sandstone and micaceous shale of the Cretaceous Panoche Formation (ERM 2014).

Seismic Characteristics

Mare Island is located within a seismically active area. Seismically, the area is dominated by the San Andreas Fault system, which is composed of a branched network of generally northwest-trending strike-slip faults. Geologic, seismologic, and geodetic evidence indicate that this fault system partially accommodates the relative motion between the North American and Pacific tectonic plates. Published geologic maps indicate that no known or inferred fault traces pass through Mare Island. The nearby active faults are summarized in Table 6-1.

Table 6-1
Regional Faults and Seismicity

Investigation Area C2 CEQA Initial Study, Lennar Mare Island, Vallejo, California

Table 6-1
Regional Faults and Seismicity

Investigation Area C2 CEQA Initial Study, Lennar Mare Island, Vallejo, California

Fault	Approximate Distance (miles) and Direction from Mare Island	Maximum Moment Magnitude
Healdsburg-Rodgers Creek	3—northwest	7.0
West Napa	6—northeast	6.5
Hayward	7—southwest	7.1
Green Valley	9—east	6.9
Concord	11—southeast	6.0
Greenville	20—southeast	6.9
Calaveras	21—south	7.1
San Andreas	25—west	7.9
San Gregario	25—southwest	7.3

These faults have caused severe ground shaking at Mare Island in the geologic past and have the potential to do so in the future.

The USGS Fact Sheet (2008-3027) estimates that the probability of a magnitude 6.7 or greater earthquake occurring on any fault within the Bay Area from 2000 to 2030 to be 63 percent (USGS 2008). The USGS estimates the following probabilities of one or more magnitude 6.7 or greater earthquakes by 2037: 21 percent on the San Andreas Fault, 32 percent on the Hayward Fault, and 31 percent on the Rodgers Creek Fault.

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:

- 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).

  Workers who would ordinarily not be present on Mare Island would be present during project activities, which increase the risk of loss, injury, or death in the project area as a result of an earthquake fault rupture. The most substantial increase in potential risk would be associated with excavation activities and activities near open excavations. However, risks associated with rupture of a known earthquake fault would be minimized through engineering controls during excavation, as appropriate. Excavations are planned to reach total depths of 2.5 feet below ground surface (bgs). However, if excavations are made deeper than 5 feet bgs, sidewall sloping and/or shoring would be employed in excavations to minimize the risk of cave-ins. In addition, excavations in soil adjacent to structures would be sloped or shored to prevent an adverse impact to building foundations.

- Strong seismic ground shaking.

  Nearby faults have caused severe ground shaking at Mare Island in the past and could occur in the future. The projects activities are not changing current land use and do not involve the construction of any new buildings/ structures. Restoration activities would include backfilling excavations and restoring hardscaped areas. Engineering controls described above would also reduce the potential impacts of seismic ground shaking in the excavation areas (Dames & Moore 1988; Geotechnical Consultants, Inc., 1998).

- Seismic-related ground failure, including liquefaction.

  Seismic-related ground failure, including liquefaction, is potentially an issue in areas with susceptible soils, especially backfill materials sourced from dredge spoils. Seismic-related ground failure, including liquefaction, is the rapid loss of soil cohesion due to substantial ground shaking. All the sites in this Initial Study are in areas that are likely underlain, at least partially, by such backfill material.

  Excavations will be backfilled by clean imported backfill and compacted. Standard backfill methodologies practiced in the region will be employed. These include structural backfill requirements and compaction requirements (Caltrans 2010) that will reduce the liquefaction potential compared to the current dredge spoil fill.

- Landslides.

  Impact Analysis: Excavations planned for Subarea 4 is in a flat area, with the ground surface elevation at approximately sea level (Trevet 2015). The excavation proposed in Subarea 6 is in a flat, low lying wetland. Although the excavation planned for Subarea 5 is the bottom of hill at the southern end of MINS, the area of the excavation has been previously graded flat and the excavation depth of 2.5 feet bgs will cause minimal disturbance to the surrounding land. There is therefore no anticipated threat of landslides occurring due to project activities.

  Conclusion:

  ☐ Potentially Significant Impact
  ☐ Potentially Significant Unless Mitigated
  ☒ Less Than Significant Impact
  ☐ No Impact

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

  Impact Analysis:
  Proposed activities involve disturbance and emplacement of soils, which could affect soil conditions. However, the project area is relatively flat and small; therefore, there would not be a significant threat of soil erosion during cleanup activities, even if localized paved surfaces are temporarily removed. Excavated areas will be backfilled to pre-excavation grade and any hardscaped surfaces will be restored. The hardscaped surfaces will be designed for adequate drainage of stormwater and would be constructed to resist erosive weather such as wind and rain.

  Standard BMPs will also be implemented to avoid erosion or loss of topsoil. These include: installation of straw wattle, soil stockpile management including covers for soil stockpiles, perimeter silt fence, fiber rolls, sandbags, and storm drain protection.

  Conclusion:

  ☐ Potentially Significant Impact
  ☐ Potentially Significant Unless Mitigated
  ☐ 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 project site is underlain by unconsolidated fill materials that are highly susceptible to liquefaction; however, given the relatively flat terrain in the project site, there would be no risk of offsite landslides associated with the project.

  The excavation evaluated by this Initial Study involves soil excavation to depths up to 2.5 feet bgs. If site conditions require that excavations are extended deeper than 5 feet bgs, sidewall sloping and/or shoring will be employed to minimize the risk of cave-ins. Excavations will be backfilled to the original (pre-excavation) relatively flat ground surface with clean imported fill materials. Standard backfill methodologies practiced in the region will be implemented. These include structural backfill requirements and compaction requirements (Caltrans 2010) that will likely more stable than the original conditions. As such, the proposed remedies would not increase the likelihood for landslide, lateral spreading, subsidence, liquefaction, or collapse.

  Conclusion:

  ☐ Potentially Significant Impact
  ☐ Potentially Significant Unless Mitigated
  ☐ 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:
Expansive soils have not been documented in the vicinity of the project sites (WESTDIV and City of Vallejo 1998). Excavations will be backfilled to their original grade with clean imported fill material (TriEcoTt 2014). No buildings or other construction are planned as part of this project. Therefore, the project would not create substantial risks to life or property due to the presence of expansive soil.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

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

Impact Analysis:
No septic tanks or other underground wastewater disposal systems are proposed to be constructed or modified as part of the project activities. Sewers are available for disposal of water in the project area and aboveground storage tanks would be used for temporary storage of extracted groundwater, if groundwater extraction is necessary, pending appropriate disposal.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

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8. Greenhouse Gas Emissions

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of concrete and contaminated soil 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, concrete, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil.
- Import of clean fill material via truck.
- Site restoration in upland areas includes backfill of all excavated areas and repaving previously hardscaped surfaces.
- Site restoration in the wetland includes backfill of the excavated area with sediment and the hand transplanting of pickleweed from clean donor areas outside of the target treatment zone.

Description of Baseline Environmental Conditions:

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). The process is similar to the effect greenhouses have in raising the internal temperature, hence the name GHGs. 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.

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

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. As noted in Section 3, the project site falls within the Bay Area Air Quality Management District's (BAAQMD) jurisdiction. The BAAQMD's CEQA Guidelines 2017 established thresholds of significance for greenhouse gases (GHGs) for operational-related activities in projects other than stationary sources. The threshold is compliance with qualified GHG reduction strategy or 1,100 metric tons of equivalent carbon dioxide (CO_2e) emissions per year or 4.6 metric tons of equivalent carbon dioxide emissions per service population per year. No thresholds of significance are available for construction-related activities.

The California Air Pollution Control Officers Association (CAPCOA) developed the California Emissions Estimator Model (CalEEMod) for the expressed purpose of evaluating emissions in CEQA compliant documents. The complete CalEEMod output is available in Attachment C.

As noted in Section 3 above, there are no operation-related emissions estimates as the project site is current vacant and no development is anticipated as part of the project (see Section 2, Table 2-1). No operations at the project area are therefore anticipated.

Although there are no construction related thresholds of significance for GHGs, the estimated CO_2e emissions for project construction with trucks being used to import clean fill material are 178.6 metric tons per year, which is below the threshold of significance for operation-related activities. Additionally, the number of project-related vehicles would be relatively small and the project duration would be relatively short. Therefore, the potential GHG emissions from this project would account for a small fraction of the Bay Area GHG emissions 94 MMT) (94 million metric tons CO_2e) presented in the 2017 CAP (BAAQMD 2017). As noted above, emissions associated with construction activities are accounted for in the regional clean air planning.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated

☒ 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 the 2017 CAP (BAAQMD 2017) and Executive Order S-1-07. Measures contained in the 2017 CAP to reduce overall emissions from construction equipment already accounted for in the regional planning emissions budget would also control project-related GHG emissions. Thus, the project would not conflict with GHG plans, policies, or regulations.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

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Bay Area Air Quality Management District. 2017. California Environmental Quality Act Air Quality Guidelines. May 2017.

California Air Pollution Control Officers Association. 2013. California Emissions Estimator Model, Version 2013.2. July 2013.

TriEcoTt. 2014. Feasibility Study Addendum, Installation Restoration Site 17 and Building 503 Area, Former Mare Island Naval Shipyard, Vallejo, California. December 15.

9. Hazards and Hazardous Materials

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of concrete and contaminated soil 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, concrete, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas with clean fill material and repaving previously hardscaped surfaces.

Description of Baseline Environmental Conditions:

The materials currently present in the project sites that would be the subject of removal actions are soil, sediment, surface paving and water from dewatered soils and sediment. Chemical constituents within these materials include lead, barium, copper, molybdenum, and zinc.

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, short-term stockpiling, and offsite disposal of soil, sediment, surface paving and/or groundwater containing lead, barium, copper, molybdenum and zinc. At concentrations above

regulatory criteria, these materials would constitute hazardous waste. Excavated materials would be managed as a potentially hazardous waste until characterization is completed. If waste characterization results indicate that excavated materials are hazardous waste, these materials would be managed and disposed of as described below. As would be specified in the site-specific health and safety plan (HASP) developed for the project, applicable site controls would be implemented to protect worker health during these activities. Per the site specific HASP, all personnel present on-site during construction, including Biological and Tribal Monitors, must be 40-hour Hazardous Waste Operations and Emergency Response HAZWOPER certified. Site controls would also be consistent with best management practices, hazardous waste regulations, and other applicable regulations and permits. Excavated/removed materials would be transported by truck to a permitted landfill for treatment (if required) and disposal. All trucks would be covered and would follow a designated route and procedures according to the traffic plan to limit impacts to residents and businesses. Prior to loading for transport, the excavated/removed materials would be stockpiled and chemically analyzed to determine appropriate treatment requirements. Potential treatment options, if necessary, would be performed at the disposal facility and may include solidification/stabilization for metals and petroleum hydrocarbon-contaminated soil and incineration for PCB and VOC-contaminated soil.

Excavated/removed materials would be covered while being stockpiled, and air monitoring will be performed using direct read instrumentation within and adjacent to the work area immediately before and during remediation to detect possible offsite impacts. Best management practices to control dust and erosion will be followed. These include: water for dust suppression, street sweeping, perimeter silt fence, fiber rolls, sandbags and storm drain protection.

Should excavated/removed materials from the site meet the classification of 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 requirements imposed by the Department of Transportation and USEPA under the Resource Conservation and Recovery Act. Haulers are also subject to California hazardous waste law requirements pertaining to hauling 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.

Additional hazardous materials involved in the project include fuels and lubricants brought on the site periodically following standard construction practices and safety standards. Transport of fuel and lubricants would conform to state and federal requirements for hazardous materials transportation. Site activities would be consistent with a site-specific HASP.

The management of potentially contaminated waste and adherence to site controls and plans reduce the potential for significant hazard to the public or the environment to result from the project.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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 project activity hazard analysis. The HASP would provide an Emergency Contingency Plan. With the correct implementation of the Emergency Contingency Plan, the potential for hazardous releases would be minimized. All truck drivers would be registered hazardous waste haulers licensed by the State of California and trained to deal with emergencies.

Potential upset conditions that could occur during cleanup activities include fire, fuel spills, hydraulic fluid leaks, as well as 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 the machinery and vehicles, proper storage of fuels, shoring/sloping of excavations more than 5 feet deep that are accessed by workers, marking of underground utilities, worker training, and enforcement of safe work practices and other safety provisions as specified in the HASP.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
The nearest school is an elementary school located across the Mare Island Strait approximately 5,450 feet east of the site. See responses to Items 8a and 8b. As discussed above, hazardous emissions from project activities would be controlled, and hazardous materials would be managed to minimize the potential for hazard to schools from project activities (Trevet 2015).

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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 proposed project is identified as an active site on DTSC's Cal Sites list of hazardous materials sites complied pursuant to Government Code Section 65962.5. However, the proposed removal activities are not expected to create a significant hazard to the public or the environment and the proposed remediation would remove contaminated material from the site to achieve health-protective remediation goals.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

Impact Analysis:
None of the remediation sites are located in a major roadway. Project activities would be conducted in a manner that does not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

Trevet 2015. Feasibility Study for Investigation Area F1, Former Mare Island

Naval Shipyard, Vallejo, California. September.

10. Hydrology and Water Quality

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of pavement and contaminated soil 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, demolished pavement, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas, and repaving previously hardscaped surfaces.
- Site restoration in the wetland that includes backfill of the excavated area with sediment and the hand transplanting of pickleweed from clean donor areas.

Description of Baseline Environmental Conditions:

Mare Island is located on the eastern edge of San Pablo Bay, near the confluence of the Napa and Sacramento-San Joaquin Rivers. Mare Island Strait (which is also the Napa River mouth) is east of Mare Island and separates Mare Island from the City of Vallejo. The Napa River drains a 230-square-mile area to the north of the Mare Island peninsula, and seasonal variations in flow from the Napa River can affect salinity levels in Mare Island Strait. Most often, the Strait has a salinity concentration above 5 parts per thousand and is considered estuarine (San Francisco Estuary Institute 2000, 2001). Higher freshwater inflows into the Strait during the wet winter months may occasionally cause the salinity levels to drop enough to classify it as freshwater.

Storm water within the project area is channeled by storm water drainage lines and surface inlets that discharge to Mare Island Strait. Portions of the project area are not paved and precipitation may seep into the soil and groundwater. Migration of subsurface groundwater appears to be limited by the shallow gradient and seasonably variable flow directions (TriEcoTt 2014). Non-tidal wetlands are located along the southwestern portions of the project area, but no surface water bodies are present.

Groundwater in the project area is present between approximately 12 feet bgs within the western upland side of the site to about 3 feet bgs at tidal wetland. Two hydrogeologic units have been identified in the project area. The first is composed of artificial fill with underlying silty clay. The second is composed of bedrock and weathered bedrock (ChaduxTt 2012a). Groundwater flow patterns at IA F1 were evaluated based on water level information recorded during groundwater sampling events. The primary flow direction in the shallow water bearing zone at IA F1 is to the northeast toward Mare Island Strait (ChaduxTt 2012a).

Subarea 6, which includes the wetland abutting the Mare Island Strait, is expected to be subject to tidal influence. Subareas 4 and 5 are not expected to be subject to tidal influence due to the shallow depths of proposed excavation and their location beyond the 200-foot limit of tidal influence (PRC 1996).

Historical use of groundwater at Mare Island has been limited and groundwater is not currently used for domestic or municipal purposes. No water supply wells are located within 1,000 feet of the project area. The California Regional Water Quality Control Board – San Francisco Bay Region concurred that groundwater at the project area does not meet the requirements for a drinking water source (Water Board 2010).

Analysis as to whether or not project activities would:

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

   Impact Analysis:
   Excavations may require dewatering of groundwater. Groundwater from excavations would be temporarily stored in tanks for sampling and appropriate offsite disposal, in accordance with local, state, and federal rules and regulations. No project activities requiring discharge of treated groundwater are proposed.

   Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
Only currently paved sections would be restored with paving after completion of cleanup activities. Therefore, the project would result in no change in the quantity of impervious surface or the amount of recharge to the project sites through percolation of surface water. Groundwater at the site is not used as a source of water supply. No ground water supply wells are located within 1,000 feet of the project area.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
There are no streams or rivers on Mare Island. Proposed cleanup activities would involve excavation of soils, which could affect local site topography/drainage patterns while the excavations remain open. However, excavated areas would be relatively small, affected for a relatively short term, and scheduled the time of year when rainfall is less likely between the months of April and October. Furthermore, following excavation activities, the site would be restored and returned to existing land cover type (impervious or pervious) and grade; therefore, the existing drainage pattern in the area (surface runoff to the storm water system) would not be significantly altered. The project site will be restored to pre-existing conditions, reducing the potential for substantial erosion or siltation on or offsite. On May 22, 2017 Sam Kumar with City of Vallejo Public Works Engineering Division stated, “Per the Navy, CERCLA remedial actions (such as this) do not require federal, state or local permits (CERCLA Section 121).” (Personal communication with Gavin McCreary, DTSC. 2017)

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
As stated in the Impact Analysis of Section 9c above, there are no streams or rivers on Mare Island. Proposed cleanup activities would involve excavation of soils, which could affect local site topography/drainage patterns while the excavations remain open. However, excavated areas would be relatively small, affected for a relatively short term, and scheduled the time of year when rainfall is less likely between the months of April and October. Other than temporary, limited topographic changes during excavation activities, the existing drainage pattern in the area (surface runoff to the stormwater system) would not be altered by cleanup activities. Therefore, the project would not substantially increase the rate or amount of surface water runoff or result in flooding on or offsite.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
Project activities do not involve the use and handling of substantial quantities of liquids that could enter the stormwater drainage system in the case of an inadvertent spill. All wastewater generated will be containerized and appropriately disposed off-site. Project activities will take place during dry months and soil stockpiles covered to prevent runoff. The project area will be restored to preexisting conditions, and will not result in a permanent change that will result in substantial additional sources of polluted runoff.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

f. Otherwise substantially degrade water quality.

Impact Analysis:
Project activities are being proposed to address potential sources of contamination in soils, the removal of which would ultimately improve water quality. Excavation activities are not expected to substantially degrade surface or ground water quality for the reasons discussed in items 9a through 9e above. Additionally, BMPs detailed in the approved SWPPP will be applied during all construction activities. The SWPPP will be submitted by the Navy as an appendix to the Work Plan that describes field activities for environmental remediation of the site. The BMPs specified in the SWPPP may include, but are not limited to silt fencing around excavation areas and soil stockpiles, scheduling of excavation activities during times of historically low precipitation, protection of storm drain inlets with catch basin inserts, anti-tracking pads installed at site exits, and street sweeping and vacuuming to remove sediments and other contaminants from paved surfaces,

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis:
No structures would be built in conjunction with this project. Heavy equipment, such as a paver, drill rig, backhoe, bulldozer, or grader, would be at the site during project implementation, but only temporarily; this equipment would not significantly impede or redirect flood flows.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

h. 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:
No dams or related structures are present within the project boundary nor does this project propose to construct any such structures; therefore, there is no anticipated risk of loss, injury, or death involving flooding due to dam or related structure failure (TriEcoTt 2014; WESTDIV and City of Vallejo 1998).

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

i. Inundation by sieche, tsunami or mudflow.

Impact Analysis:
Workers who would ordinarily not be present on Mare Island would be present during project activities, which would potentially result in an increased risk of loss, injury, or death in the project area as a result of inundation by seiche or tsunami. Given the developed state of the project site, there is no anticipated risk related to inundation by mudflow (TriEcoTt 2014; WESTDIV and City of Vallejo 1998). The project would construct no new structures on the site, and other than the short-term excavations would not alter the existing topography. Therefore, the increased risk of inundation by seiche or tsunami would be less than significant.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

Personal Communication between Sam Kumar, City of Vallejo Public Works Engineering Division and Gavin McCreary, DTSC. May 22, 2017.
PRC. 1996. Technical Memorandum: Tidal Influence Study, Mare Island. November 20.
Trevet 2015. Feasibility Study for Investigation Area F1, Former Mare Island Naval Shipyard, Vallejo, California. September.
WESTDIV and City of Vallejo. 1998. Mare Island Naval Shipyard Disposal and Reuse Final Environmental Impact Statement/Environmental Impact Report. April.

11. Land Use and Planning

Project Activities Likely to Create an Impact:

- None.

Description of Baseline Environmental Conditions:

Mare Island area IA F1 is bound by Mare Island Strait to the east, space planned for reuse as an open space regional park to the south, industrial space proposed for mixed-use light industrial reuse and open space/wetlands to the north, and a golf course to the west (City of Vallejo 2008). The project site is paved, bare ground, landscaped, or covered with buildings (Trevet 2015). The proposed Institutional Controls would limit future land use to industrial, a regional park, and a conservation area which are consistent with the current Mare Island Specific Plan, and would prohibit sensitive land uses (e.g., for residences, hospitals, daycare facilities, and schools for persons under age 18) at the site. Project activities would not conflict with existing land use plans (Trevet 2015) because no project related zoning or land use changes are proposed. Site remediation actions are consistent with the planned land uses. Consequently, no further analysis of impacts is deemed necessary.

Analysis as to whether or not project activities would:

a. 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:

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

b. Conflict with any applicable habitat conservation plan or natural community conservation plan.

Impact Analysis:

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used:

City of Vallejo. 2005. Mare Island Specific Plan. Amended August 2013.
City of Vallejo. 2008. "Mare Island Specific Plan." Adopted March 1999: amended and stated December 2005; amended July 2007; and amended June 2008.

12. Mineral Resources

Project Activities Likely to Create an Impact:

- None.

Description of Baseline Environmental Conditions:

The project sites are currently developed with commercial or industrial land uses; no known mineral resources exist or are recovered within the property boundaries (SWA 2000). Furthermore, project activities would not affect recovery of mineral resources at offsite locations. Consequently, no further analysis of mineral resources is necessary.

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:

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ 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:

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used:

SWA. 2000. Preliminary Land Use Plan. May 23.

13. Noise

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of demolished paving and contaminated soil and sediment 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, sediment, demolished paving materials, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas and repaving previously hardscaped surfaces.

Description of Baseline Environmental Conditions:

In response to the federal Noise Control Act of 1974, the USEPA identified indoor and outdoor noise limits to protect public health and welfare (e.g., prevent hearing damage, sleep disturbance, and communication disruption). Day-night average outdoor sound values of 55 decibels, A-weighted (dBA) and indoor sound values of 45 dBA are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and health-care areas. Noise level criteria to protect against hearing damage are identified as 24-hour overall noise (Leq) values of 70 dBA for both indoor and outdoor (WESTDIV and City of Vallejo 1998).

While these noise thresholds have been identified by the USEPA, the state and local governments generally have responsibility for regulating noise. Typically, noise regulations correspond with zoning ordinances for a locality. This can include not only residential areas but also office, light industrial, and heavy use/manufacturing activities.

The City of Vallejo General Plan has a number of noise related policies, some of which include (City of Vallejo 1999):

- Exterior noise levels at outdoor use areas for residences should not exceed 60 dBA day-night average sound level (Ldn). Exterior noise levels up to 65 dBA Ldn may be allowed if the lower threshold is not economically or aesthetically reasonable.
- Where appropriate, limit noise generating activities such as construction activities to the hours of 7:00 am and 8:00 pm.

The first threshold is generally more focused on long-term land uses and activities, while the second applies only to construction related noise.

The Vallejo Municipal Code also specifies noise standards. In addition to general prohibition to unnecessary loud and unusual noise, the Code does not allow the use of domestic power tools or loading and unloading of building materials or similar objects that would create a noise disturbance across a residential property boundary between the hours of 9:00 pm and 7:00 am. The Code also has numerical performance standards for land uses (e.g., not exceeding 60 dBA in residential districts) but such standards do not apply to temporary construction or demolition work.

The primary existing noise sources on the east side of Mare Island are engine noises from commercial shipping, vessel traffic, industrial activities, and occasional aircraft overflights. Wind and wildlife also produce ambient noise. As stated in Item d. in Section 3.0 (Air Quality) the nearest sensitive receptors are situated over 2,000 feet from the site.

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:
The proposed project would involve short-term construction related activities that are expected to last several months. The primary sources of noise during construction at the site would be from the operation of equipment such as loaders, backhoes, asphalt pavers, rollers, drill rigs and jackhammers. The project work would not occur during restricted hours of 8:00 pm to 7:00 am. As discussed above, there are several different restrictions on the hours during which noisy work can be conducted. For this project, the more conservative restrictions are being applied, i.e., work will be completed at the end of each day before 8:00 pm.

For onsite cleanup workers, hearing protection will be used, consistent with the site-specific HASP, for worker safety and to reduce the potential that appropriate noise criteria would be exceeded while working at the project site. Workers will wear hearing protection, including earplugs and/or earmuffs while working on and around heavy equipment. If necessary, engineering controls could be implemented, including replacing defective equipment parts, tightening loose or vibrating equipment parts, and placing “noisy” equipment as far away as possible from site workers and sensitive receptors. Should engineering controls prove infeasible, administrative controls would be implemented, including adjusting employee work assignments to limit the duration of their exposure to noise created during field activities. With appropriate hearing protection, equipment operation is not expected to result in noise exposure to employees exceeding the Occupational Safety and Health Administration level of 90 dBA (8-hour time weighted average).

As discussed previously, the City of Vallejo General Plan and Municipal Code specifies policies and standards related to exposing sensitive receptors, such as residences, to noise. However, the quantitative exposure thresholds specified in the General Plan and Municipal code are generally not applicable to short-term construction activities. The General Plan and Municipal Code does prohibit the operation of construction related equipment between 9:00 pm and 7:00 am. The proposed project would prohibit construction activities between restricted hours (specifically the most restrictive hours, since the restrictions vary) and thus would be consistent with the General Plan and Municipal Code. The proposed actions would not be performed during the restricted hours listed in the local, general plan and as such, will not exceed the standards established in that plan.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis:
Some construction equipment, such as jackhammers and bulldozers, could contribute to noise levels or groundborne vibration. Construction workers will wear appropriate hearing protection, and engineering controls will be used to reduce groundborne vibration or noise levels (USEPA 1971, 1980).

Given the type of equipment to be used and the distances from the construction areas to sensitive receptors, offsite noise sensitive receptors are not expected to be exposed to excessive groundborne vibration or groundborne noise levels. For example, the Federal Transit Administration’s (FTA) *Transit Noise and Vibration Impact Assessment* (FTA 2006) specify acceptable levels of vibration. In particular, the FTA document specifies an acceptable vibration threshold of 72 VdB (vibration decibels) for residential areas. Between jackhammers, bulldozers, and trucks, bulldozers generally have the greatest potential for producing vibration that may be felt by offsite sensitive receptors. However, sensitive receptors are not expected to experience vibration levels greater than 72 VdB if they are 80 feet or more from the bulldozer. No sensitive receptors are located within 80 feet of the proposed site cleanup actions. Work zone perimeters to protect the public from excessive groundborne vibration and noise levels would not need to be set

since sensitive receptors are more than 80 feet from the proposed site work. Work zone delineation would be set to protect the public from heavy construction equipment, as discussed in Section 8 (Hazards and Hazardous Materials).

Sandy Beach Road is located on the eastern shore of Marie Island Strait and there are a number of residences situated along the shoreline off Sandy Beach Road. Construction noise would travel unabated across the Strait and residents may be aware of construction activities occurring on Mare Island. These noise impacts would be temporary, within regulatory limits, and consistent with the other on-going industrial activities in the area.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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 project is expected to take approximately several months. The project does not include the permanent installation of any noise-generating equipment, and once construction is complete, noise levels would return to pre-project levels. Therefore, no permanent increase in ambient noise levels is expected.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ 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:
Project activities would cause a temporary increase in noise levels in the vicinity of the project sites. As discussed in item 12a. above, workers at the project site would be required to wear appropriate hearing protection to reduce noise levels (USEPA 1971, 1980). However, the distances to the nearest sensitive receptors are great enough (at least 2,000 feet) that additional mitigation to protect the sensitive receptors from noise and vibration caused by the site work is not necessary. The proposed activity would not result in a significant change in noise or vibration levels. Short-term construction activities would be performed consistent with the noise elements specified in the General Plan and Municipal Code. For example, construction activities would be prohibited between the hours of 8:00 pm and 7:00 am.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

City of Vallejo. 1999. "Vallejo General Plan, Noise Element." July 1999.
Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May.
Trevet 2015. Feasibility Study for Investigation Area F1, Former Mare Island Naval Shipyard, Vallejo, California. September.
United States Environmental Protection Agency (USEPA). 1971. Noise from Construction Equipment and Operations, Building Equipment and Appliances.
USEPA. 1980. Construction Noise Control Technology Initiatives. Office of Noise Abatement and Control.
WESTDIV and City of Vallejo. 1998. Mare Island Naval Shipyard Disposal and Reuse Final Environmental Impact Statement/Environmental Impact Report. April.

14. Population and Housing

Project Activities Likely to Create an Impact:

- None.

Description of Baseline Environmental Conditions:

There is currently no housing within the project area. The City of Vallejo's Mare Island Specific Plan identifies the areas around the project area as the South Island Business Park and Regional Park. The South Island Business Park will be developed primarily with mixed-use light industrial and heavy industrial uses. The Regional Park is designated for use as developed recreation. No residential uses are proposed for the Project site. Project activities would be performed by a small, temporary, labor pool, and would not induce growth in the site area. The project would not affect existing housing or necessitate construction of any replacement housing. For these reasons, no further analysis of population and housing impacts is deemed necessary.

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:

   Conclusion:

   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

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

   Impact Analysis:

   Conclusion:

   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

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

   Impact Analysis:

   Conclusion:

   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

References Used:

City of Vallejo. 2005. Mare Island Specific Plan. Amended August 2013.

15. Public Services

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of demolished paving and contaminated soil 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, concrete, waste water and/or miscellaneous debris to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas and repaving previously hardscaped surfaces.

Description of Baseline Environmental Conditions:

The Vallejo Police Department (VPD), the Solano County Sheriff's Department, and the California Highway Patrol service the City of Vallejo. However, the VPD has the primary responsibility for law enforcement on Mare Island. The VPD does not maintain an office or substation on Mare Island but does conduct daily routine patrols of Mare Island. The Vallejo Fire Department (VFD) provides fire protection for Mare Island. The Vallejo Fire Department does maintain an administrative office on Mare Island, but not an active service station; the nearest active station is Fire Station 1, located at 1220 Marin Street, approximately 2 miles from the project site.

Kaiser Medical Center, Sutter-Solano Medical Center, and First Hospital in Vallejo provide medical services for community residents. Kaiser and Sutter-Solano Hospitals operate full-service 24-hour emergency rooms. The nearest hospital, Kaiser Medical Center, is located 3.5 miles from the project site. Ambulance service on Mare Island is typically provided by private ambulance services and may also be provided by VFD.

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
   - Police protection
   - Schools
   - Parks
   - Other public facilities

   Impact Analysis:
   Project activities as planned would not increase the demand for public services so that alterations to existing facilities or new facilities would be necessary. The need for fire and police protection services would be similar to current conditions, and could be accommodated by the existing public services. The project would not increase the demand for schools, parks, or other public facilities.

   Conclusion:

   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☒ Less Than Significant Impact
   ☐ No Impact

References Used: None.

16. Recreation

Project Activities Likely to Create an Impact:

- None.

Description of Baseline Environmental Conditions:

The reuse of a small portion of land within Subarea 5 includes an area planned for future use as recreation or as a corridor for movement of populations towards recreational facilities (Trevet 2015). For this reason, an analysis of modest project-related recreation impacts is deemed necessary.

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 project site is currently closed to the public and surrounded by fencing to prevent public access. Construction activities will not impact recreational activities at the site.

   Conclusion:

   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☒ 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 southern portion of Subarea 5 is part of a much larger 188-acre area planned for reuse as a regional park. A small increase in traffic on this part of the island should be expected during construction, but these impacts would be negligible and short-term (approximately 6 months). A small increase in traffic related to recreational use of the area is expected after remedial activities and site restoration are complete.

   Conclusion:

   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☒ Less Than Significant Impact
   ☐ No Impact

References Used:

Trevet 2015. Feasibility Study for Investigation Area F1, Former Mare Island Naval Shipyard, Vallejo, California. September.

17. Transportation and Traffic

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of contaminated soil and demolished paving 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, concrete, sediment, wastewater and/or wood to appropriate facilities based on waste characterization.
- Importation of clean soil by truck.
- Site restoration, including backfill of all excavated areas.
- Restoration of hardscaped surfaces.
- Vehicular traffic from workers involved with site cleanup.
- Transport of equipment and supplies.

Description of Baseline Environmental Conditions:

The streets on Mare Island are local roads and have light, generally free-flowing traffic. According to the Congestion Management Program (CMP) (STA 2013), the peak 2010 congestion for locations near Mare Island was Level of Service (LOS) C. This street system consists of a number of roadways characterized by one lane of traffic in either direction. These roadways are connected to a major arterial by two-lane, one-way roads. Egress from Mare Island is via the State Route 37 arterial, which is a busy thoroughfare with two lanes of traffic in either direction.

Analysis as to whether or not project activities would:

a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

   Impact Analysis:
   The project work would generate a variety of different trips including trucks delivering equipment and materials, personnel and support vehicles, and trucks transporting soil and other waste materials off Mare Island. The cleanup actions within Subareas 4, 5, and 6 are expected to generate the largest number of truck trips (approximately 490 truck trips total for off haul of contaminated soil and 540 truck trips total for import for restoration). Export of excavated material and import of backfill material would require the maximum number of truck trips and these activities would occur over approximately 6 months. The estimates of truck trips required for the proposed activity are based on maximum expected volumes of material for on/off site transport. The actual number of truck trips per day would likely be less than the estimates provided here since these estimates are based on a “worst case” scenario. The project activities would include traffic at various times and locations and traffic conditions may be assessed daily to stagger vehicle trips related to the project work. The exact times and locations of the traffic cannot be defined prior to the start of fieldwork. A traffic plan will be developed and implemented in order to minimize congestion on the adjacent roadways and address the traffic concerns of the community. California Department of Transportation-licensed transporters would transport the soil offsite in trucks. The project would involve stockpiling and transporting the excavated/removed materials (including soil, demolished paving and/or waste water) (Trevet 2015); however, each site has ample nearby support area such that no stockpiling would need to occur in public streets. None of the proposed activities must occur near public roads – the cleanup activities are either beneath existing buildings or in areas off public roadways.

   There would be limited impacts to pedestrian and bicycle circulation from the project. The proposed work would not occur on designated bike paths or pedestrian routes. Mare Island does not have any mass transit. Therefore, the project would not conflict with applicable plans, ordinances, or policies related to the pedestrian and bicycle performance of the circulation system.

   Conclusion:

   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☒ Less Than Significant Impact
   ☐ No Impact

b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway.

   Impact Analysis:

Mare Island is located in Solano County within the jurisdiction of the Solano Transportation Authority (STA), which is the Congestion Management Agency (CMA). As the CMA, STA released a new Congestion Management Program (CMP) in December 2013, which outlines requirements around level of service on the county's roadways (STA 2013). This document outlines that the Level of Service (LOS) must remain above the minimum threshold. LOS is typically ranked from “A” (free flowing vehicle travel) to “F” (basically stop-and-go traffic). STA 2013 established a minimum LOS threshold of “E.” According to the CMP (STA 2013), the peak LOS in 2010 was a “C” for the locations near Mare Island.

The project may result in an estimated maximum of approximately 490 truck trips during excavated material off haul and 540 truck trips during backfilling of the excavations in Subareas 4, 5 and 6. The duration of the cleanup activities that would generate an average of 12 truck trips per day over the 6-month construction period. A traffic control plan (TCP) will be developed and implemented to ensure project activities would not result in a substantial increase in traffic relative to the existing traffic levels STA CMP (STA 2013). The TCP will include requirements such a staggering truck trips avoid congestion and limiting hours of truck traffic to off peak traffic hours.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis:
Safety is a priority both onsite and adjacent to the site. Fences, signs, and other devices will be used as necessary to prevent accidents or injury to facility personnel, nearby workers, and off-site residents. No materials or equipment will be stored where it would interfere with the free and safe passage of facility personnel and tenants (ERM 2014). Vehicles associated with the work will be required to follow all applicable speed limits and traffic laws, including covering and securing loads.

Prior to the beginning of construction, a detailed traffic control plan will be formulated and provided to the City of Vallejo for informational purposes. The plan will adhere to all rules and regulations to protect vehicles, pedestrians, and site workers.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Result in inadequate emergency access.

Impact Analysis:
As discussed above, appropriate traffic plans will be followed (and provided for informational purposes to the City of Vallejo) so the project activities would not significantly impede access to roads, including emergency access routes. The street system on Mare Island allows for a variety of routes for emergency ingress or egress, although the options for accessing Mare Island by vehicle are limited to SR 37 and the Ernest D. Wichels Memorial Causeway located north of the site.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Result in inadequate parking capacity.

Impact Analysis:
The current project area is vacant, as are surrounding properties to the north and south. Adequate space for parking is available within the project area. Any increased parking demand in the project vicinity is expected to be temporary and the project would not result in a permanent increase in demand for parking.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Impact Analysis:
Project-related road use would be short-term, anticipated to last approximately two weeks and the traffic plan will include measures to safely divert bicycle and pedestrian traffic. There would be no change in road design, thus no permanent impacts to the safety of the bicycle or pedestrian facilities would occur. There are no public transit systems on Mare Island, so there are no related plans or programs. The proposed work would not significantly impact existing roadways, bicycle paths, or pedestrian facilities and therefore would not conflict with any related, adopted policies, plans, or programs.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

California Department of Transportation. 1996. Manual of Traffic Controls for Construction and Maintenance Work Zones.

Solano Transportation Authority (STA), 2013. Congestion Management Program. December.

18. Tribal Cultural Resources

Project Activities Likely to Create an Impact:

- Excavation of contaminated soil and demolished paving using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, or grader).
- Site restoration, including backfill of all excavated areas.

Description of Baseline Environmental Conditions:

The Navy acquired Mare Island in 1853 and started shipbuilding operations the following year. Prior to the 1900s, the IA F1 area was primarily a tidal wetland, although ordnance was manufactured and stored at IA F1 since the initiation of Mare Island Naval operations. By 1932, most of the area's ground elevation was raised with imported dredge spoils or upland fill material. Prior to the Navy's acquisition, the site was available for use by the local Native Tribes.

DTSC's Office of Environmental Justice and Tribal Affairs (EJTA) contacted the Native American Heritage Commission (NAHC) about this Site and received a response, dated February 27, 2017, indicating that a search of NAHC's Sacred Lands File was negative for the area in which the Site is located. NAHC included a Native American Contacts List for the area of the Site. DTSC sent letters of inquiry, dated May 8, 2017, specific to the Mare Island 1A-F1 site to the three Tribal governments identified by NAHC. EJTA has followed up with these contacts to assure that the letters of inquiry were received and that there were no concerns regarding Tribal Cultural Resources at the Site.

EJTA has received a response from one of the tribal contacts indicating an interest in this Site and met with representatives from the Tribe on August 25, 2017 to discuss the proposed project.

As a precaution, the Removal Action Workplan (RAW) recommends the following suite of Best Management Practices (BMPs): If any potential pre-historic or historic-era materials are discovered during excavation activities, all work in that area will be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds. If the materials are found to be Native American in origin, the project Construction Manager will immediately contact any of the Tribal Contacts on the list provided by NAHC to alert them of the discovery. DTSC staff and the Navy are also to be immediately notified and informed of this situation. After discussion with any of the Tribal Contacts and/or their respective Cultural Resources Managers and in collaboration with DTSC (including the Office of Environmental Justice and Tribal Affairs) and the property owner, implement any measures deemed necessary to record and/or protect the pre-historic or historic resources.

In addition, the contractors performing the remedial activities on the Site are to be alerted to be observant and aware that they may encounter potential Native American cultural or archaeological resources and/or human remains.

In the event of accidental discovery or recognition of any human remains during ground disturbing activities, excavation or disturbance of the Site or any nearby area shall stop immediately and the Construction Manager will request that the County Coroner to determine its origin. The coroner will determine disposition within 48 hours. If the remains are Native American, the coroner will be responsible for contacting the NAHC within 24 hours. The NAHC will identify and notify the person(s) who might be the most likely descendent (MLD) who will make recommendations for the appropriate and dignified treatment of the remains (Public Resources Code, section 5097.98). The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the Site (CEQA Guidelines, CCR section 15064.5(e); HSC section 7050.5).

In the event of accidental discovery of potential cultural or archaeological resources, the Construction Manager will immediately suspend excavation activities in the immediate area and surrounding 50 feet until a qualified archaeologist can evaluate the nature and significance of the discovery. The Construction Manager will immediately contact any of the Tribal Contacts on the list provided by NAHC to alert them of the discovery. DTSC staff and property owner are also to be immediately notified and informed of this situation. After discussion with any of the Tribal Contacts and/or their respective Cultural Resources Managers and in collaboration with DTSC (including the Office of Environmental Justice and Tribal Affairs) and the Navy, implement any measures deemed necessary to record and/or protect the cultural or archaeological resources.

Analysis as to whether or not project activities would:
Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Section 5024.1(c).

Impact Analysis:
The Site is a former Navy industrial property located on Mare Island. There are four locations listed on the National Registry for Historic Places in the vicinity of the Site.

The Native American Heritage Commission identified three potential Native American Tribes interested in the Site. DTSC sent letters to Tribal Contacts on May 8, 2017 and consulted with a representative from one of the tribal governments. Prior to initiating groundbreaking activities, Cultural Sensitivity Training will be provided by the Navy to onsite workers. If any archaeological resources are uncovered during Site work, project activities will be halted and a Tribal representative(s) and/or a qualified archaeologist will be contacted immediately. Given the prior use of the site, it is unlikely that archaeological resources are present on-site; therefore, no impact to Tribal Cultural Resources is expected.

Conclusion:
☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated

☐ Less Than Significant Impact
☒ No Impact

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 Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact Analysis:
No Tribal Cultural Resources have been identified at the Site. The Native American Heritage Commission identified several potential Native American Tribes interested in the Site. DTSC sent letters to Tribal Contacts on May 8, 2017 and consulted with a representative from one of the tribal governments. If any archaeological resources are uncovered during Site work, project activities will be halted and a Tribal representative(s) and/or a qualified archaeologist will be contacted immediately. Finding archaeological resources is unlikely, so no impact is expected.

Conclusion:
☐ Potentially Significant Impact
☐ Less Than Significant With Mitigation Incorporated
☐ Less Than Significant Impact
☒ No Impact

References Used:
DTSC Correspondence with the three Tribal governments listed by the NAHC.

19. Utilities and Service Systems

Project Activities Likely to Create an Impact:

- Excavation/removal and stockpiling of contaminated soil and demolished paving 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 concrete to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration, including backfill of all excavated areas, revegetation, and restoration of hardscaped surfaces.

Description of Baseline Environmental Conditions:

Utility services are supplied by the City of Vallejo (sewer and potable water), AT&T (telephone), and Island Energy (power).

Analysis as to whether or not project activities would:

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

Impact Analysis:
Liquid waste generated during project activities could include extracted groundwater, if dewatering is necessary to prevent excavation sidewall cave-ins. Any accumulated groundwater will be extracted, contained and disposed of off-site. The limited anticipated volume of extracted water would not be a substantial load to the existing disposal systems. Due to the small anticipated volumes, the generated wastewater would not impact wastewater treatment and disposal facilities.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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: The project activities would be limited in duration, and would not involve a substantial increase in demand for domestic water or generation of wastewater. Excavation activities do not require a significant amount of water from the water supply system. As noted for Item a. above, some dewatering could be required; however, the volume of extracted groundwater, if any, would be limited. As stated above, this wastewater would be containerized and disposed offsite at an appropriate disposal facility. Therefore, the project would not require expansion of existing water or wastewater facilities or the construction of new facilities.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ 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: As discussed in Section 9.0 (Hydrology and Water Quality), the project would not substantially alter the existing drainage pattern of the site. In addition, the project would not involve discharges to storm drains. Therefore, the project activities would not require the construction of new storm water drainage facilities or the expansion of existing facilities.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ 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: Relatively minor volumes of water would be needed for equipment decontamination and dust control during project implementation. Existing water supply from the City of Vallejo would be used, thus existing entitlements and resources would be sufficient.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ 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:
The limited volume of wastewater generated in association with the project would be containerized and disposed offsite at an approved facility. Adequate capacity exists to accommodate project activities.

Conclusion:

☐ Potentially Significant Impact

☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.

Impact Analysis: Waste associated with project activities would be disposed of in appropriately-licensed offsite facilities with sufficient permitted capacity to accept the solid waste generated from project activities.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

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

Impact Analysis: Project activities including disposal of waste would comply with federal, state, and local statutes and regulations.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used:

Trevet 2015. Feasibility Study for Investigation Area F1, Former Mare Island Naval Shipyard, Vallejo, California. September.

20. Wildfire

Project Activities Likely to Create an Impact:

- Activities limiting access for emergency response or evacuation.
- Use of diesel- and gas-powered equipment within vegetated areas.
- Activities occurring with prevailing winds from west.

Description of Baseline Environmental Conditions:

The site is located on a flat area that abuts a grassy and foliage covered hill on the west and northwest sides. Mare Island Strait lies on the east and south sides of the site. The Navy maintains the site by mowing and monitoring vegetation. Only maintenance personnel are permitted access. The site has roads that would enable expeditious evacuation and is readily accessible to emergency personnel. Per the “Fire and Resource Assessment Program – California Department of Forestry and Fire Protection, Draft Fire Hazard Severity Zones in LRA for Solano County” map, dated October 3, 2007, the Site is located within a local responsibility area, high fire severity zone. Wildland fire protection in California is the responsibility of either the State, local government, or the federal government. Local responsibility areas include incorporated cities, cultivated agricultural lands, and portions of the desert. Local area fire protection is typically provided by city fire departments, fire protection districts, counties, and by CAL FIRE under contract to local government. Fire Hazard is based on factors such as fuel, slope, and fire weather.

Analysis as to whether or not project activities would:

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact Analysis: Although the Site is located in high severity zone for fire, it is isolated from any populated or congested areas and is currently fenced and closed to public access. Any maintenance workers, the only people who occasionally access the site, will be provided with ample space for evacuation in case of emergency situations that may occur during site mitigation activities.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Impact Analysis: Although the project Site is located within a local responsibility area, high fire severity zone, it is maintained and regularly mowed to minimize wildfire hazards. The site is located on a relatively flat surface that would not contribute to risk of fire. Prevailing winds from the west are largely blocked by the hilly area on the southern portion of the former MINS. There are no other factors that would exacerbate risk of fire associated with the project.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Impact Analysis: The project site is developed and will not require the installation or maintenance of associated infrastructure. All infrastructure required for project activities is preexisting.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impact Analysis: In general, the site and especially the excavation areas are flat. The site is bounded by Mare Island Strait on the north and east sides and the hilly area on the south and west sides. No people or structures are located downslope. Excavation areas will be backfilled and compacted to the original elevations allowing no changes in drainage to occur.

Conclusion:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

Mandatory Findings of Significance

Based on evidence provided in this Initial Study, DTSC 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 remediating potential sources of contamination in soil, which could also reduce potential impacts to surface water and groundwater quality. Project controls and Best Management Practices will ensure that the project areas temporarily disturbed by the cleanup activities would not impact the adjacent habitat of endangered species or offshore habitats. There are identified endangered species in the project area. However, based on the evaluation presented in Section 4.0 (Biological Resources), 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, reduce the number or restrict the range of a rare or endangered plant or animal. Based on the evaluation presented in Section 5.0 (Cultural Resources), historical resources were identified within and near the project area. However, intrusive activities would be minimal and therefore be a less than significant potential to eliminate important examples of the major periods of California history or prehistory.

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 to pre-project conditions (Trevet 2015). Therefore, the cumulative impacts from project activities are not deemed considerable.

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

   When considering this Initial Study and the administrative record, there is no evidence before DTSC that the proposed project would have a significant adverse effect on human beings, either directly or in-directly.

References Used:

Trevet 2015. Feasibility Study for Investigation Area F1, Former Mare Island Naval Shipyard, Vallejo, California. September.

Determination of Appropriate Environmental Document:

Based on evidence provided in this Initial Study, DTSC makes the following determination:

☒ The proposed project COULD NOT HAVE a significant effect on the environment. A **Negative Declaration** will be prepared.

☐ The proposed project COULD HAVE a significant effect on the environment. However, 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.

☐ The proposed project MAY HAVE a significant effect on the environment. An **Environmental Impact Report** is required.

☐ 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.

☐ The proposed project COULD HAVE a significant effect on the environment. However, all potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report or Negative Declaration pursuant to

applicable standards, and (b) have been avoided or mitigated pursuant to that earlier Environmental Impact Report or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project. Therefore, nothing further is required.

Certification:

I hereby certify that the statements furnished above and in the attached exhibits, present the data and information required for this initial study evaluation to the best of my ability and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

Preparer's Signature	5/15/2019 Date

Gavin McCreary	Environmental Scientist	916-255-3710
Preparer's Name	Preparer's Title	Phone #

Branch or Unit Chief Signature	5/14/19 Date

Daniel Murphy	Acting Branch Chief	510-540-3772
Branch or Unit Chief Name	Branch or Unit Chief Title	Phone #

ATTACHMENT A

FIGURES

LEGEND

Boundary of Former Mare Island Naval Shipyard

NOTE:
Environmental Systems Research Institute (ESRI)
USA Spatial Feature Classes

N

3.5 0 3.5 7
Miles

DEPARTMENT OF THE NAVY
SAN DIEGO, CALIFORNIA

NAVAL FACILITIES
ENGINEERING COMMAND

IA F1 FEASIBILITY STUDY REPORT
FORMER MARE ISLAND NAVAL SHIPYARD
VALLEJO, CALIFORNIA

FIGURE 1

LOCATION MAP

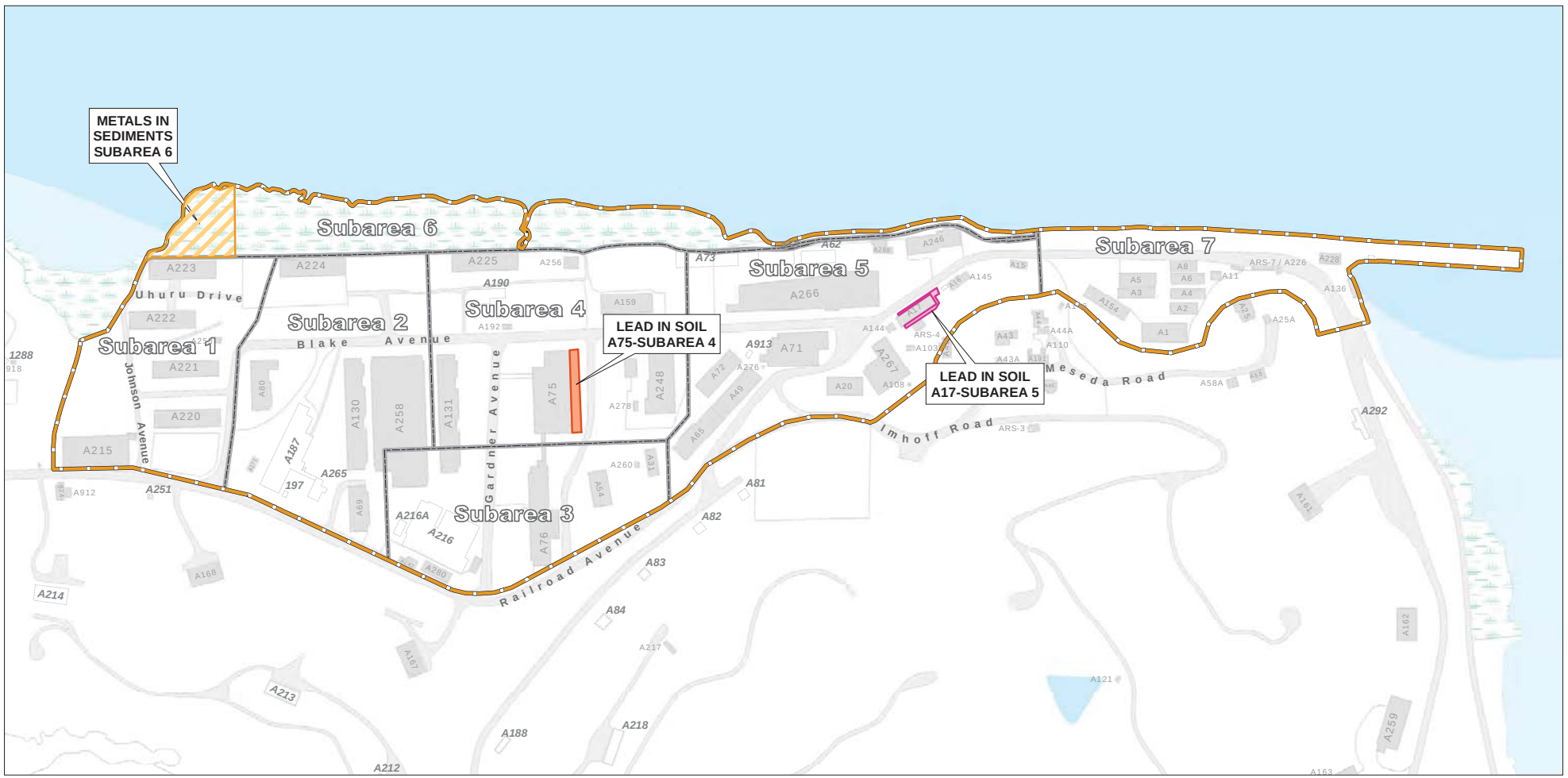
TREVET

DATE: SEPTEMBER 2015

CONTRACT NO.: N62473-12-C-4805

Path: N:\GIS_Projects\MareIslandFigs_IAF1_RAA_9-15\Fig1_SLM_Mare_9.15.mxd

Date: 9/3/2015



Approximate Target Treatment Zone
- Lead in Soil - Subarea 4
- Lead in Soil - Subarea 5
- Metals in Sediment - Subarea 6

- Investigation Area F1
- Subarea Boundary
- 2007 - 2008 TCRA Excavation Area
- 2000 Excavation Area
- Removed Structure
- Building/Structure
- Road
- Site Feature
- Wetland
- Mudflat
- Water

Notes:
FS - Feasibility Study
IA - Investigation Area
TCRA - Time-Critical Removal Action
TPH -Total Petroleum Hydrocarbons
TTZ - Target Treatment Zone

GRAPHIC SCALE
0 150 300 600
(IN FEET)
1 INCH = 300 FEET

DEPARTMENT OF THE NAVY
SAN DIEGO, CALIFORNIA
NAVAL FACILITIES ENGINEERING COMMAND

IA F1 FEASIBILITY STUDY REPORT
FORMER MARE ISLAND NAVAL SHIPYARD
VALLEJO, CALIFORNIA

FIGURE 2

TARGET TREATMENT ZONES EVALUATED AT IA F1

TREVET

DATE: SEPTEMBER 2015
CONTRACT NO.: N62473-12-C-4805

Date: 9/3/2015 Path: N:\GIS_Projects\MareIslandFigs_IAF1_RAA_9-15\Fig2_Remedial_Areas_9-15.mxd

ATTACHMENT B

REFERENCES

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ATTACHMENT C

CalEEMod Output

Mare Island Naval Shipyard IA - F1

Solano-San Francisco County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	1.20	51,850.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Mare Island Naval Shipyard IA - F1 - Solano-San Francisco County, Winter

Project Characteristics - REVISED

Land Use - based on excavation area square footage

Construction Phase - 0s are non-applicable

Off-road Equipment - not applicable

Off-road Equipment - not appilcable

Off-road Equipment - bulldo

Off-road Equipment - bsaed on provided information from IS

Off-road Equipment - not applicable

Off-road Equipment - not applicable

Trips and VMT - not applicable

Demolition -

Grading - total cares of site

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	200.00	0.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	4.00	110.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	7.00
tblGrading	AcresOfGrading	55.00	1.20
tblGrading	AcresOfGrading	0.00	0.90
tblGrading	MaterialExported	0.00	4,850.00
tblGrading	MaterialExported	0.00	1,420.00
tblLandUse	BuildingSpaceSquareFeet	0.00	51,850.00

tblLandUse	LandUseSquareFeet	0.00	51,850.00
tblLandUse	LotAcreage	0.00	1.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripNumber	2.00	1.00
tblTripsAndVMT	HaulingTripNumber	178.00	2.00
tblTripsAndVMT	HaulingTripNumber	606.00	712.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	22.00	0.00

tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	4.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.5068	27.5598	14.3053	0.0330	6.2588	1.2768	7.4715	3.3717	1.1930	4.4972	0.0000	3,284.3780	3,284.3780	0.7824	0.0000	3,303.9368
Maximum	**2.5068**	**27.5598**	**14.3053**	**0.0330**	**6.2588**	**1.2768**	**7.4715**	**3.3717**	**1.1930**	**4.4972**	**0.0000**	**3,284.3780**	**3,284.3780**	**0.7824**	**0.0000**	**3,303.9368**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.5068	27.5598	14.3053	0.0330	2.9376	1.2768	4.1503	1.5499	1.1930	2.6754	0.0000	3,284.3780	3,284.3780	0.7824	0.0000	3,303.9368
Maximum	**2.5068**	**27.5598**	**14.3053**	**0.0330**	**2.9376**	**1.2768**	**4.1503**	**1.5499**	**1.1930**	**2.6754**	**0.0000**	**3,284.3780**	**3,284.3780**	**0.7824**	**0.0000**	**3,303.9368**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.07**	**0.00**	**44.45**	**54.03**	**0.00**	**40.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2577	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.2577**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2577	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.2577**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/7/2019	5	5	
2	Site Preparation	Site Preparation	1/8/2019	1/16/2019	5	7	
3	Grading	Grading	1/17/2019	6/19/2019	5	110	
4	Building Construction	Building Construction	6/20/2019	6/19/2019	5	0	
5	Paving	Paving	6/20/2019	6/26/2019	5	5	
6	Architectural Coating	Architectural Coating	6/27/2019	6/26/2019	5	0	

Acres of Grading (Site Preparation Phase): 0.9

Acres of Grading (Grading Phase): 1.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 77,775; Non-Residential Outdoor: 25,925; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Mare Island Naval Shipyard IA - F1 - Solano-San Francisco County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	0	1.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	1.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Pumps	1	4.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	0	6.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	0	6.00	78	0.48

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
Demolition	4	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	712.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0899	0.0000	0.0899	0.0136	0.0000	0.0136			0.0000			0.0000
Off-Road	2.4397	25.9944	12.8686	0.0257		1.2757	1.2757		1.1920	1.1920		2,522.9190	2,522.9190	0.6524		2,539.2297
Total	**2.4397**	**25.9944**	**12.8686**	**0.0257**	**0.0899**	**1.2757**	**1.3655**	**0.0136**	**1.1920**	**1.2056**		**2,522.9190**	**2,522.9190**	**0.6524**		**2,539.2297**

3.2 Demolition - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8300e-003	0.0596	0.0107	1.6000e-004	3.5000e-003	2.4000e-004	3.7400e-003	9.6000e-004	2.3000e-004	1.1900e-003		16.8723	16.8723	7.4000e-004		16.8909
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
Worker	0.0653	0.0488	0.4385	1.2200e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335		121.2552	121.2552	3.4300e-003		121.3410
Total	**0.0671**	**0.1084**	**0.4493**	**1.3800e-003**	**0.1267**	**1.0900e-003**	**0.1278**	**0.0336**	**1.0100e-003**	**0.0347**		**138.1275**	**138.1275**	**4.1700e-003**		**138.2319**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0404	0.0000	0.0404	6.1200e-003	0.0000	6.1200e-003			0.0000			0.0000
Off-Road	2.4397	25.9944	12.8686	0.0257		1.2757	1.2757		1.1920	1.1920	0.0000	2,522.9190	2,522.9190	0.6524		2,539.2297
Total	**2.4397**	**25.9944**	**12.8686**	**0.0257**	**0.0404**	**1.2757**	**1.3161**	**6.1200e-003**	**1.1920**	**1.1981**	**0.0000**	**2,522.9190**	**2,522.9190**	**0.6524**		**2,539.2297**

3.2 Demolition - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8300e-003	0.0596	0.0107	1.6000e-004	3.5000e-003	2.4000e-004	3.7400e-003	9.6000e-004	2.3000e-004	1.1900e-003		16.8723	16.8723	7.4000e-004		16.8909
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
Worker	0.0653	0.0488	0.4385	1.2200e-003	0.1232	8.5000e-004	0.1241	0.0327	7.8000e-004	0.0335		121.2552	121.2552	3.4300e-003		121.3410
Total	**0.0671**	**0.1084**	**0.4493**	**1.3800e-003**	**0.1267**	**1.0900e-003**	**0.1278**	**0.0336**	**1.0100e-003**	**0.0347**		**138.1275**	**138.1275**	**4.1700e-003**		**138.2319**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1814	0.0000	6.1814	3.3284	0.0000	3.3284			0.0000			0.0000
Off-Road	1.5689	15.9917	6.9232	0.0119		0.8849	0.8849		0.8141	0.8141		1,179.2820	1,179.2820	0.3731		1,188.6099
Total	**1.5689**	**15.9917**	**6.9232**	**0.0119**	**6.1814**	**0.8849**	**7.0663**	**3.3284**	**0.8141**	**4.1425**		**1,179.2820**	**1,179.2820**	**0.3731**		**1,188.6099**

3.3 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6200e-003	0.0851	0.0153	2.3000e-004	5.0000e-003	3.4000e-004	5.3500e-003	1.3700e-003	3.3000e-004	1.7000e-003		24.1033	24.1033	1.0600e-003		24.1298
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
Worker	0.0218	0.0163	0.1462	4.1000e-004	0.0411	2.8000e-004	0.0414	0.0109	2.6000e-004	0.0112		40.4184	40.4184	1.1400e-003		40.4470
Total	**0.0244**	**0.1013**	**0.1615**	**6.4000e-004**	**0.0461**	**6.2000e-004**	**0.0467**	**0.0123**	**5.9000e-004**	**0.0129**		**64.5217**	**64.5217**	**2.2000e-003**		**64.5768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7816	0.0000	2.7816	1.4978	0.0000	1.4978			0.0000			0.0000
Off-Road	1.5689	15.9917	6.9232	0.0119		0.8849	0.8849		0.8141	0.8141	0.0000	1,179.2820	1,179.2820	0.3731		1,188.6099
Total	**1.5689**	**15.9917**	**6.9232**	**0.0119**	**2.7816**	**0.8849**	**3.6665**	**1.4978**	**0.8141**	**2.3119**	**0.0000**	**1,179.2820**	**1,179.2820**	**0.3731**		**1,188.6099**

3.3 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.6200e-003	0.0851	0.0153	2.3000e-004	5.0000e-003	3.4000e-004	5.3500e-003	1.3700e-003	3.3000e-004	1.7000e-003		24.1033	24.1033	1.0600e-003		24.1298
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
Worker	0.0218	0.0163	0.1462	4.1000e-004	0.0411	2.8000e-004	0.0414	0.0109	2.6000e-004	0.0112		40.4184	40.4184	1.1400e-003		40.4470
Total	**0.0244**	**0.1013**	**0.1615**	**6.4000e-004**	**0.0461**	**6.2000e-004**	**0.0467**	**0.0123**	**5.9000e-004**	**0.0129**		**64.5217**	**64.5217**	**2.2000e-003**		**64.5768**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0386	0.0000	6.0386	3.3122	0.0000	3.3122			0.0000			0.0000
Off-Road	2.3500	25.5902	13.5786	0.0267		1.2042	1.2042		1.1174	1.1174		2,633.2404	2,633.2404	0.7554		2,652.1253
Total	**2.3500**	**25.5902**	**13.5786**	**0.0267**	**6.0386**	**1.2042**	**7.2429**	**3.3122**	**1.1174**	**4.4296**		**2,633.2404**	**2,633.2404**	**0.7554**		**2,652.1253**

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0593	1.9273	0.3466	5.1900e-003	0.1134	7.7600e-003	0.1211	0.0311	7.4200e-003	0.0385		546.0498	546.0498	0.0240		546.6493
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
Worker	0.0566	0.0423	0.3801	1.0600e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		105.0879	105.0879	2.9700e-003		105.1622
Total	**0.1159**	**1.9696**	**0.7267**	**6.2500e-003**	**0.2202**	**8.5000e-003**	**0.2287**	**0.0594**	**8.1000e-003**	**0.0675**		**651.1376**	**651.1376**	**0.0270**		**651.8115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7174	0.0000	2.7174	1.4905	0.0000	1.4905			0.0000			0.0000
Off-Road	2.3500	25.5902	13.5786	0.0267		1.2042	1.2042		1.1174	1.1174	0.0000	2,633.2403	2,633.2403	0.7554		2,652.1253
Total	**2.3500**	**25.5902**	**13.5786**	**0.0267**	**2.7174**	**1.2042**	**3.9216**	**1.4905**	**1.1174**	**2.6079**	**0.0000**	**2,633.2403**	**2,633.2403**	**0.7554**		**2,652.1253**

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0593	1.9273	0.3466	5.1900e-003	0.1134	7.7600e-003	0.1211	0.0311	7.4200e-003	0.0385		546.0498	546.0498	0.0240		546.6493
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
Worker	0.0566	0.0423	0.3801	1.0600e-003	0.1068	7.4000e-004	0.1075	0.0283	6.8000e-004	0.0290		105.0879	105.0879	2.9700e-003		105.1622
Total	**0.1159**	**1.9696**	**0.7267**	**6.2500e-003**	**0.2202**	**8.5000e-003**	**0.2287**	**0.0594**	**8.1000e-003**	**0.0675**		**651.1376**	**651.1376**	**0.0270**		**651.8115**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

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

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

3.5 Building Construction - 2019

Mitigated Construction Off-Site

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

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815		1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9038**	**9.1743**	**8.9025**	**0.0135**		**0.5225**	**0.5225**		**0.4815**	**0.4815**		**1,325.0953**	**1,325.0953**	**0.4112**		**1,335.3751**

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0435	0.0325	0.2924	8.1000e-004	0.0822	5.7000e-004	0.0827	0.0218	5.2000e-004	0.0223		80.8368	80.8368	2.2900e-003		80.8940
Total	**0.0435**	**0.0325**	**0.2924**	**8.1000e-004**	**0.0822**	**5.7000e-004**	**0.0827**	**0.0218**	**5.2000e-004**	**0.0223**		**80.8368**	**80.8368**	**2.2900e-003**		**80.8940**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815	0.0000	1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9038**	**9.1743**	**8.9025**	**0.0135**		**0.5225**	**0.5225**		**0.4815**	**0.4815**	**0.0000**	**1,325.0953**	**1,325.0953**	**0.4112**		**1,335.3751**

3.6 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
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
Worker	0.0435	0.0325	0.2924	8.1000e-004	0.0822	5.7000e-004	0.0827	0.0218	5.2000e-004	0.0223		80.8368	80.8368	2.2900e-003		80.8940
Total	**0.0435**	**0.0325**	**0.2924**	**8.1000e-004**	**0.0822**	**5.7000e-004**	**0.0827**	**0.0218**	**5.2000e-004**	**0.0223**		**80.8368**	**80.8368**	**2.2900e-003**		**80.8940**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2019

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2019

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	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 Recreational	0.584264	0.036754	0.174658	0.112986	0.019233	0.005457	0.009466	0.043414	0.003239	0.002257	0.006611	0.000609	0.001053

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2577	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.2577	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1482					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.2578**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1482					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**1.2578**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Mare Island Naval Shipyard IA - F1

Solano-San Francisco County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	1.20	51,850.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	56
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Mare Island Naval Shipyard IA - F1 - Solano-San Francisco County, Annual

Project Characteristics - REVISED

Land Use - based on excavation area square footage

Construction Phase - 0s are non-applicable

Off-road Equipment - not applicable

Off-road Equipment - not appilcable

Off-road Equipment - bulldo

Off-road Equipment - bsaed on provided information from IS

Off-road Equipment - not applicable

Off-road Equipment - not applicable

Trips and VMT - not applicable

Demolition -

Grading - total cares of site

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	NumDays	200.00	0.00
tblConstructionPhase	NumDays	20.00	5.00
tblConstructionPhase	NumDays	4.00	110.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	7.00
tblGrading	AcresOfGrading	55.00	1.20
tblGrading	AcresOfGrading	0.00	0.90
tblGrading	MaterialExported	0.00	4,850.00
tblGrading	MaterialExported	0.00	1,420.00
tblLandUse	BuildingSpaceSquareFeet	0.00	51,850.00

tblLandUse	LandUseSquareFeet	0.00	51,850.00
tblLandUse	LotAcreage	0.00	1.20
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripNumber	2.00	1.00
tblTripsAndVMT	HaulingTripNumber	178.00	2.00
tblTripsAndVMT	HaulingTripNumber	606.00	712.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	22.00	0.00

tblTripsAndVMT	WorkerTripNumber	13.00	10.00
tblTripsAndVMT	WorkerTripNumber	4.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1495	1.6598	0.8658	1.9700e-003	0.3664	0.0743	0.4407	0.1972	0.0689	0.2661	0.0000	177.5055	177.5055	0.0426	0.0000	178.5702
Maximum	**0.1495**	**1.6598**	**0.8658**	**1.9700e-003**	**0.3664**	**0.0743**	**0.4407**	**0.1972**	**0.0689**	**0.2661**	**0.0000**	**177.5055**	**177.5055**	**0.0426**	**0.0000**	**178.5702**

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					
2019	0.1495	1.6598	0.8658	1.9700e-003	0.1717	0.0743	0.2460	0.0906	0.0689	0.1595	0.0000	177.5053	177.5053	0.0426	0.0000	178.5700
Maximum	**0.1495**	**1.6598**	**0.8658**	**1.9700e-003**	**0.1717**	**0.0743**	**0.2460**	**0.0906**	**0.0689**	**0.1595**	**0.0000**	**177.5053**	**177.5053**	**0.0426**	**0.0000**	**178.5700**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**53.14**	**0.00**	**44.18**	**54.06**	**0.00**	**40.06**	**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	1-1-2019	3-31-2019	0.9219	0.9219
2	4-1-2019	6-30-2019	0.8814	0.8814
		Highest	0.9219	0.9219

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	0.2295	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-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	**0.2295**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2295	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-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	**0.2295**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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

3.0 Construction Detail

Construction Phase

Mare Island Naval Shipyard IA - F1 - Solano-San Francisco County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2019	1/7/2019	5	5	
2	Site Preparation	Site Preparation	1/8/2019	1/16/2019	5	7	
3	Grading	Grading	1/17/2019	6/19/2019	5	110	
4	Building Construction	Building Construction	6/20/2019	6/19/2019	5	0	
5	Paving	Paving	6/20/2019	6/26/2019	5	5	
6	Architectural Coating	Architectural Coating	6/27/2019	6/26/2019	5	0	

Acres of Grading (Site Preparation Phase): 0.9

Acres of Grading (Grading Phase): 1.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 77,775; Non-Residential Outdoor: 25,925; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Mare Island Naval Shipyard IA - F1 - Solano-San Francisco County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Crawler Tractors	1	8.00	212	0.43
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	0	1.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	1.00	97	0.37
Site Preparation	Trenchers	1	8.00	78	0.50
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Pumps	1	4.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	0	6.00	231	0.29
Building Construction	Forklifts	0	6.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	0	6.00	78	0.48

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
Demolition	4	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	2.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	13.00	0.00	712.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	0	0.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2019

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					2.2000e-004	0.0000	2.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0650	0.0322	6.0000e-005		3.1900e-003	3.1900e-003		2.9800e-003	2.9800e-003	0.0000	5.7219	5.7219	1.4800e-003	0.0000	5.7589
Total	**6.1000e-003**	**0.0650**	**0.0322**	**6.0000e-005**	**2.2000e-004**	**3.1900e-003**	**3.4100e-003**	**3.0000e-005**	**2.9800e-003**	**3.0100e-003**	**0.0000**	**5.7219**	**5.7219**	**1.4800e-003**	**0.0000**	**5.7589**

3.2 Demolition - 2019

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	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0388	0.0388	0.0000	0.0000	0.0388
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.0600e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2798	0.2798	1.0000e-005	0.0000	0.2800
Total	**1.5000e-004**	**2.6000e-004**	**1.0900e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3185**	**0.3185**	**1.0000e-005**	**0.0000**	**0.3188**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-004	0.0000	1.0000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0650	0.0322	6.0000e-005		3.1900e-003	3.1900e-003		2.9800e-003	2.9800e-003	0.0000	5.7219	5.7219	1.4800e-003	0.0000	5.7589
Total	**6.1000e-003**	**0.0650**	**0.0322**	**6.0000e-005**	**1.0000e-004**	**3.1900e-003**	**3.2900e-003**	**2.0000e-005**	**2.9800e-003**	**3.0000e-003**	**0.0000**	**5.7219**	**5.7219**	**1.4800e-003**	**0.0000**	**5.7589**

3.2 Demolition - 2019

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	1.5000e-004	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0388	0.0388	0.0000	0.0000	0.0388
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.0600e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2798	0.2798	1.0000e-005	0.0000	0.2800
Total	**1.5000e-004**	**2.6000e-004**	**1.0900e-003**	**0.0000**	**3.1000e-004**	**0.0000**	**3.1000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3185**	**0.3185**	**1.0000e-005**	**0.0000**	**0.3188**

3.3 Site Preparation - 2019

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					0.0216	0.0000	0.0216	0.0117	0.0000	0.0117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4900e-003	0.0560	0.0242	4.0000e-005		3.1000e-003	3.1000e-003		2.8500e-003	2.8500e-003	0.0000	3.7444	3.7444	1.1800e-003	0.0000	3.7740
Total	**5.4900e-003**	**0.0560**	**0.0242**	**4.0000e-005**	**0.0216**	**3.1000e-003**	**0.0247**	**0.0117**	**2.8500e-003**	**0.0145**	**0.0000**	**3.7444**	**3.7444**	**1.1800e-003**	**0.0000**	**3.7740**

3.3 Site Preparation - 2019

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	1.0000e-005	3.0000e-004	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0775	0.0775	0.0000	0.0000	0.0776
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	7.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1306	0.1306	0.0000	0.0000	0.1307
Total	**8.0000e-005**	**3.5000e-004**	**5.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.2081**	**0.2081**	**0.0000**	**0.0000**	**0.2083**

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					9.7400e-003	0.0000	9.7400e-003	5.2400e-003	0.0000	5.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4900e-003	0.0560	0.0242	4.0000e-005		3.1000e-003	3.1000e-003		2.8500e-003	2.8500e-003	0.0000	3.7444	3.7444	1.1800e-003	0.0000	3.7740
Total	**5.4900e-003**	**0.0560**	**0.0242**	**4.0000e-005**	**9.7400e-003**	**3.1000e-003**	**0.0128**	**5.2400e-003**	**2.8500e-003**	**8.0900e-003**	**0.0000**	**3.7444**	**3.7444**	**1.1800e-003**	**0.0000**	**3.7740**

3.3 Site Preparation - 2019

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	1.0000e-005	3.0000e-004	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0775	0.0775	0.0000	0.0000	0.0776
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	7.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1306	0.1306	0.0000	0.0000	0.1307
Total	**8.0000e-005**	**3.5000e-004**	**5.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.2081**	**0.2081**	**0.0000**	**0.0000**	**0.2083**

3.4 Grading - 2019

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					0.3321	0.0000	0.3321	0.1822	0.0000	0.1822	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1293	1.4075	0.7468	1.4700e-003		0.0662	0.0662		0.0615	0.0615	0.0000	131.3860	131.3860	0.0377	0.0000	132.3282
Total	**0.1293**	**1.4075**	**0.7468**	**1.4700e-003**	**0.3321**	**0.0662**	**0.3984**	**0.1822**	**0.0615**	**0.2436**	**0.0000**	**131.3860**	**131.3860**	**0.0377**	**0.0000**	**132.3282**

3.4 Grading - 2019

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	3.1900e-003	0.1057	0.0178	2.9000e-004	6.0600e-003	4.2000e-004	6.4800e-003	1.6700e-003	4.0000e-004	2.0700e-003	0.0000	27.6007	27.6007	1.1300e-003	0.0000	27.6290
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	2.8500e-003	2.0700e-003	0.0201	6.0000e-005	5.6800e-003	4.0000e-005	5.7200e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	5.3342	5.3342	1.5000e-004	0.0000	5.3379
Total	**6.0400e-003**	**0.1077**	**0.0380**	**3.5000e-004**	**0.0117**	**4.6000e-004**	**0.0122**	**3.1800e-003**	**4.4000e-004**	**3.6200e-003**	**0.0000**	**32.9349**	**32.9349**	**1.2800e-003**	**0.0000**	**32.9668**

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					0.1495	0.0000	0.1495	0.0820	0.0000	0.0820	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1293	1.4075	0.7468	1.4700e-003		0.0662	0.0662		0.0615	0.0615	0.0000	131.3858	131.3858	0.0377	0.0000	132.3281
Total	**0.1293**	**1.4075**	**0.7468**	**1.4700e-003**	**0.1495**	**0.0662**	**0.2157**	**0.0820**	**0.0615**	**0.1434**	**0.0000**	**131.3858**	**131.3858**	**0.0377**	**0.0000**	**132.3281**

3.4 Grading - 2019

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	3.1900e-003	0.1057	0.0178	2.9000e-004	6.0600e-003	4.2000e-004	6.4800e-003	1.6700e-003	4.0000e-004	2.0700e-003	0.0000	27.6007	27.6007	1.1300e-003	0.0000	27.6290
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	2.8500e-003	2.0700e-003	0.0201	6.0000e-005	5.6800e-003	4.0000e-005	5.7200e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	5.3342	5.3342	1.5000e-004	0.0000	5.3379
Total	**6.0400e-003**	**0.1077**	**0.0380**	**3.5000e-004**	**0.0117**	**4.6000e-004**	**0.0122**	**3.1800e-003**	**4.4000e-004**	**3.6200e-003**	**0.0000**	**32.9349**	**32.9349**	**1.2800e-003**	**0.0000**	**32.9668**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

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

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

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

3.5 Building Construction - 2019

Mitigated Construction Off-Site

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

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2600e-003	0.0229	0.0223	3.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	3.0053	3.0053	9.3000e-004	0.0000	3.0286
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.2600e-003**	**0.0229**	**0.0223**	**3.0000e-005**		**1.3100e-003**	**1.3100e-003**		**1.2000e-003**	**1.2000e-003**	**0.0000**	**3.0053**	**3.0053**	**9.3000e-004**	**0.0000**	**3.0286**

3.6 Paving - 2019

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	1.0000e-004	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1865	0.1865	1.0000e-005	0.0000	0.1866
Total	**1.0000e-004**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1865**	**0.1865**	**1.0000e-005**	**0.0000**	**0.1866**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.2600e-003	0.0229	0.0223	3.0000e-005		1.3100e-003	1.3100e-003		1.2000e-003	1.2000e-003	0.0000	3.0053	3.0053	9.3000e-004	0.0000	3.0286
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.2600e-003**	**0.0229**	**0.0223**	**3.0000e-005**		**1.3100e-003**	**1.3100e-003**		**1.2000e-003**	**1.2000e-003**	**0.0000**	**3.0053**	**3.0053**	**9.3000e-004**	**0.0000**	**3.0286**

3.6 Paving - 2019

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	1.0000e-004	7.0000e-005	7.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1865	0.1865	1.0000e-005	0.0000	0.1866
Total	**1.0000e-004**	**7.0000e-005**	**7.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1865**	**0.1865**	**1.0000e-005**	**0.0000**	**0.1866**

3.7 Architectural Coating - 2019

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					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2019

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2019

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

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

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	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 Recreational	0.584264	0.036754	0.174658	0.112986	0.019233	0.005457	0.009466	0.043414	0.003239	0.002257	0.006611	0.000609	0.001053

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2295	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.2295	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-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	0.0270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2025					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.2295**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	0.0270					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2025					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.2295**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

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

7.2 Water by Land Use

Mitigated

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

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

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

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT D

Table 1: Applicable or Relevant and Appropriate Requirements

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
California Code of Regulations (CCR) Title 14 Sections 670.2, 670.5, and 783 et. seq. **California Fish and Game Code (FGC) Sections 1900-1913, 2080, 3503, 3511, 3513, 4700** **U.S. Endangered Species Act of 1973 (ESA), 16 U.S. Code of Government Regulations (USC) 1531 et seq.** **Migratory Bird Treaty Act (MBTA), 16 USC Section 703 to 712, 50 Code of Federal Regulations (CFR) Parts 10, 13, 14, 20 & 21**	**Remediation activities may have a substantial adverse effect, to fully protected species [salt marsh harvest mouse (SMHM), black rails, clapper rails], rare plants, and birds protected by the Migratory Bird Treaty Act (MBTA).**	**ARAR 1. Biological Resource Education Program** A U.S. Navy contracted biologist (approved by the U.S. Fish and Wildlife Service [USFWS] and CDFW-OSPR) will conduct a Biological Resource Education Program briefing to all contractor and subcontractor personnel prior to entry to the IA F1. The biologist will be experienced with and knowledgeable about the salt marsh harvest mouse (SMHM), rails, rare plants, and birds protected by the Migratory Bird Treaty Act (MBTA). This briefing will review sensitive biological resources (e.g., SMHM, jurisdictional wetlands, etc.) within the work area and will identify all protection measures to be implemented to comply with the applicable State and Federal Applicable or Relevant and Appropriate Requirements. New employees will attend a briefing by the biological monitor prior to participating in work activities.	**Prior to the start of any project-related ground disturbing activities and new employees starting work on the project.**	**Biologist shall maintain a construction-monitoring notebook on-site throughout the construction period, including signatures of all personnel who completed the education program.**
CCR Title 14 Sections 670.2, 670.5, and 783 et. seq. **FGC Sections 1900-1913, 2080, 3503, 3511, 3513, 4700** **ESA, 16 USC 1531 et seq.**	**Remediation activities may have a substantial adverse effect on salt marsh harvest mouse habitat, a fully protected species**	**ARAR 2. Coastal salt marsh vegetation removal procedures.** Coastal salt marsh wetlands vegetation will be removed under the supervision of a USFWS and CDFW-OSPR approved biologist who will survey the areas for SMHM, rails, rare plants, and birds protected by the MBTA prior to vegetation removal. If a mouse of any species is observed within the areas being removed of vegetation, the USFWS and CDFW-OSPR will be notified. Unless otherwise approved by the USFWS and CDFW-OSPR, the mouse shall be left alone and allowed to move out of the area on its own volition. Vegetation removal may begin when no mice are	**Prior to excavation of Subarea 6.**	**Biologist to monitor vegetation removal and report results to submitted to CDFW-OSPR, USFWS and DTSC.**

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
MBTA, 16 USC Section 703 to 712, 50 CFR Parts 10, 13, 14, 20 & 21		observed. If vegetation removal is in the 50-foot buffer zone, it will start at the edge farthest from the salt marsh and work its way towards the salt marsh. This method of removal provides cover for SMHM and allows SMHM to move towards the salt marsh on its own volition as vegetation is removed. Coastal salt marsh wetlands and any vegetation which needs to be removed within a 50-foot buffer around the coastal salt marsh wetlands will be removed using hand tools only. Motorized equipment, such as bulldozers, will not be used within the wetlands or 50-foot buffer. Motorized hand tools, such as chainsaws, can be used to clear brush from the wetland and buffer. A biological monitor will be present during removal of vegetation within 50 feet of coastal salt marsh wetlands. Non-handheld equipment will be limited to the areas where the vegetation has been cut. Personnel may walk into coastal salt marsh wetlands accompanied by the biologist.		
FGC Section 4700	**Remediation activities may have a substantial adverse effect salt marsh harvest mouse habitat.**	**ARAR 3. Silt Fence Installation and Maintenance** Salt marsh harvest mouse exclusion fencing must be installed between areas of coast marsh wetlands and work sites immediately following vegetation removal to prevent entry of salt marsh harvest mice into cleared areas. All supports for the exclusion fencing must be placed on the inside of the work area to prevent salt marsh harvest mice from climbing the stakes into the work area. The salt marsh harvest mouse-proof exclusion fencing must be at least two feet high but no higher than four feet. The fencing must be made of a heavy plastic sheeting material that is too smooth for salt marsh harvest mice to climb. A four-foot buffer will be maintained free of vegetation around the exclusion fencing and work areas. The fencing must be trenched into the ground and backfilled to prevent salt marsh harvest mice from moving underneath the fencing. The final design and proposed location of the fencing must be reviewed and approved by the USFWS and CDFW-OSPR prior to being installed. The biological monitor will have the authority to make field adjustments to the location of the fencing depending on site-	**Prior to installation of fencing, a site plan that delineates fencing locations must be approved by USFWS and CDFW-OSPR.** **Prior to excavation, fencing must be installed.**	**Biologist monitors fence installation and maintenance for exclusion of SMHM and prevention of offsite turbidity. Biologist will notify CDFW-OSPR, USFWS and DTSC of any problems.**

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
		specific habitat conditions. A qualified biologist must inspect fencing periodically during the work day to ensure that it remains an effective barrier to prevent entry of salt marsh harvest mice into work areas. If the biologist determines that the fencing needs repairs, they will direct the construction manager of the repairs to be made. Construction crews must maintain the fencing as needed throughout the work period, including the habitat restoration work. All necessary repairs to the fencing must be completed within 24 hours of the initial observance of the damage. Work will not continue until the fences are repaired and the site is inspected by a qualified biologist to ensure that salt marsh harvest mice have not entered the work area.		
CCR Title 14 Sections 670.2, 670.5, and 783 et. seq. **FGC Sections 1900-1913, 2080, 3503, 3511, 3513, 4700** **ESA, 16 USC 1531 et seq.** **MBTA, 16 USC Section 703 to 712, 50 CFR Parts 10, 13, 14, 20 & 21**	**Remediation activities may have a substantial adverse effect on coastal salt marsh wetland and habitat for salt marsh harvest mouse, black rails, clapper rails and rare plant species.**	**ARAR 4. Biological Monitor responsibilities.** A qualified biologist approved by the USFWS and CDFW-OSPR will be present onsite to monitor for SMHM (and rails, rare plants, and birds protected by the MBTA) during all work activities in potential habitat areas. The biologist monitor will: • Observe work periodically within the adjacent upland areas; • Inspect the work area and adjacent habitat areas to determine presence of SMHM, rails, rare plants, or MBTA birds; • Remain onsite throughout the day while work activities are occurring in habitat areas; • Coordinate appropriate avoidance and mitigation measures with USFWS and CDFW-OSPR if a rare plant species is observed; • Have stop work authority if deemed necessary for any reason to protect SMHM (or any other State or Federal "Threatened or Endangered" or "Fully Protected" species, including rails, rare plants, and birds protected by the MBTA). If a mouse of any species (or a rail, or rare plant species) is observed in the work area (i.e., in the immediate vicinity of an intrusive investigation), no work in the area of the observed species will be initiated, OR will be stopped immediately by the	**During site remediation.**	**Biologist submits reports to USFWS, CDFW-OSPR, and DTSC.**

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
		biologist until the mouse (or rail) leaves the intrusive investigation area of its own volition and USFWS and CDFW-OSPR are notified. If the mouse or rail does not leave the intrusive investigation area, work would not be reinitiated until the USFWS and CDFW-OSPR are contacted and have made a decision on how to proceed with work activities. The biological monitor would direct the contractor on how to proceed accordingly.		
CCR Title 14 Sections 670.2, 670.5, and 783 et. seq. **FGC Sections 1900-1913, 2080, 3503, 3511, 3513, 4700** **ESA, 16 USC 1531 et seq.** **MBTA, 16 USC Section 703 to 712, 50 CFR Parts 10, 13, 14, 20 & 21**	**Remediation activities may have a substantial adverse effect on the salt marsh harvest mouse, black rails, clapper rails and rare plant species.**	**ARAR 5. Biological Monitor Daily Report** The qualified biologist must complete a monitoring report for each day of monitoring, which includes: the date, location, biologist's name, remedial activities occurring, special status species observed, species behavior in relation to remedial activities, and any corrective measures taken to protect the species. The biological monitoring reports must be submitted to USFWS and CDFW-OSPR on a weekly basis for the duration of the remedial activities.	**Weekly basis for the duration of the remedial activities.**	**Biologist submits reports to USFWS and CDFW-OSPR.**
FGC Section 3511 **ESA, 16 USC 1531 et seq.**	**Remediation activities may have a substantial adverse effect to black rails and clapper rails.**	**ARAR 6. Preconstruction Biological Survey for rails.** Protocol-level surveys for California clapper rails (i.e., four rounds of surveys conducted between mid-January and April) must be completed prior to any work occurring within or near suitable California clapper rail breeding habitat at Subarea 6 during the rail's February 1 - August 31 breeding season. No work will occur within suitable California clapper rail breeding habitat at Subarea 6 within 700 feet of a California clapper rail activity center (as determined by protocol-level surveys) during the rail's breeding season. The first round of protocol-level surveys must start prior to February 1 or any work at Subarea 6 will be delayed until September 1.	**Prior to commencement of any project-related ground disturbing activities**	**Report submitted to CDFW-OSPR, USFWS and DTSC.**

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
CCR Title 14 Section 670.2 **FGC Sections 1900-1913** **ESA, 16 USC 1531 et seq.**	**Remediation activities may have a substantial adverse effect to rare plants.**	**ARAR 7. Preconstruction Biological Surveys.** A qualified biologist who has been approved by the USFWS and CDFW-OSPR shall survey all access routes, staging, and storage areas, stockpile and dewatering areas, decontamination areas, and work areas prior to the start of any project activities, during the time of year when species are evident and identifiable. If a special-status plant or stand of special-status plants is found, it will be flagged, and activities in the work area will be placed on hold pending further consultation with CDFW and USFWS. A copy of the preconstruction survey shall be submitted to CDFW, USFWS, and DTSC prior to project initiation.	**Prior to commencement of any project-related ground disturbing activities**	**Report submitted to CDFW-OSPR, USFWS and DTSC.**
FGC Sections 3503 & 3513 **MBTA, 16 USC Section 703 to 712, 50 CFR Parts 10, 13, 14, 20 & 21**	**Remediation activities may have a substantial adverse effect to birds protected by the Migratory Bird Treaty Act (MBTA).**	**ARAR 8. Monitoring During Protected Species Nesting Season.** If site work will be conducted between the dates of February 1 and September 15, a qualified biologist will conduct a visual inspection of the site (all staging and storage areas, transportation routes, work areas, and soil stockpile areas) for protected nesting birds within a reasonable time prior to commencement of any project activities. If work is stopped for more than a reasonable time as determined by the qualified biologist during the protected species nesting season, the Project Site will be reassessed before a return to work activities. The site biological monitor will inspect the work area and natural habitats occurring within a reasonable distance (250 feet) of the work area to identify active nests of protected species. If no active nests of protected species are found, no further mitigation will be conducted. The qualified biologist shall look for new nests at least twice per week during remedial activities during the nesting season. If protected nesting birds are found during visual inspections, USFWS and CDFW-OSPR will be notified and the Navy will coordinate with the USFWS and CDFW-OSPR to assess appropriate avoidance and mitigation measures. If vegetation containing protected nesting birds must be removed during nesting season (February 1-September 15) as a result of project implementation,	**Seven days prior to commencement of any project activities**	**Report submitted to CDFW-OSPR, USFWS and DTSC.**

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
		the Navy will coordinate with both the USFWS and CDFW-OSPR to assess appropriate avoidance or mitigation measures. If a qualified biologist in coordination with the USFWS and CDFW-OSPR determines the project activity will not be likely to adversely affect the active nest, the project may proceed. The qualified biologist will monitor the activity of the protected nesting birds (including rails or birds protected by the MBTA) during work activities. If the birds behave normally, the biologist will monitor them twice per week to ensure the status has not changed. If the birds change their behavior as a result of work activities, the biologist will continue to monitor the birds as work is modified to avoid disturbance to birds until the birds act normally. The biologist will then monitor the birds twice per week to ensure the status has not changed.		
Porter-Cologne Water Quality Control Act (CWC Sections 13260, 13263, 13269, 13370.5, 13372, 13373, 13374, 13375, 13376, 13377, 13383) **State Water Resources Control Board Order #97-03-DWQ** **40 CFR Parts 122, 123, 124** **Fish and Game Commission Wetlands Policy (adopted 1987) included in Fish and Game Code Addenda**	**Remediation activities may have a substantial adverse effect on water quality and fish habitat.**	**ARAR 9. Operations, Equipment, and Personnel** Excavation activities within or adjacent to wetland habitat will not be conducted two hours before and after extreme high tides (6.5 feet above mean lower low water[MLLW]), measured at the Golden Gate Bridge. Excavation and haul equipment will be confined to the access routes, designated staging areas and designated excavation areas. Upland routes covered with pavement, bare ground, or non-native vegetation will be utilized as access routes to and from the intrusive investigations, to the maximum extent practicable. The equipment decontamination area will be located in the designated upland staging area away from any wetlands habitat.	**Two hours before and after extreme high tides (6.5 feet above MLLW).**	**Monitoring tide forecasts for Golden Gate Bridge to determine suspension of excavation with Subarea 6.**

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
FGC 1600 et seq., 5650 (a), (b) & (f)				
FGC 1600 et seq., 5650 (a), (b) & (f) **ESA, 16 USC 1531 et seq.** **50 CFR 402: ESA Section 7 Regulations**	**Some remediation activities may occur in Mare Island Strait (Napa River) and have a substantial adverse effect to Delta smelt, other protected fish species and riparian habitats.**	**ARAR 10. Protection measures for fish species and riparian habitats.** If this project conducts in-water excavation activities, they must occur within the in-water work windows (after August 1 and before October 15) established by the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife (CDFW). To avoid impacts to critical life stages of these species, all in-water excavation, including the placement and removal of water quality protections (e.g., silt curtains), shall occur after August 1 and before October 15th Prior to in-water work beginning, a silt curtain shall be installed to exclude fish (including Sacramento splittail) from the work area and to protect water quality. The silt curtain shall be placed around the work area in the river prior to sediment excavation. The suspension of any sediment within the work zone shall be contained by the silt curtain, protecting water quality and aquatic species.	**In-water activities can only occur after August 1st and before October 15th.**	**Biologist will notify CDFW-OSPR, NMFS, and USFWS of any work within the Mare Island Strait.**
Fish and Game Commission Wetlands Policy (adopted 1987) included in Fish and Game Code Addenda **FGC 1600 et seq., 4700** **Porter-Cologne Water Quality Control Act (CWC Division 7. Water Quality)**	**Remediation activities of Subarea 6 may have a substantial adverse effect on coastal salt marsh wetland and habitat for salt marsh harvest mouse, black rails, clapper rails and rare plant species.**	**ARAR 11. Subarea 6, coastal salt marsh wetland restoration and compensatory mitigation.** The portions of the coastal salt marsh wetlands within IA F1 that are temporarily affected by the proposed action must be restored to coastal salt marsh wetlands habitat for the SMHM and may require compensatory mitigation. Wetland vegetation within the wetlands disturbed by remediation work must be approved by USACE, RWQCB and CDFW. The restoration requirements include: • Develop a detailed restoration plan by a qualified restoration ecologist. • Backfill excavated areas with clean sediment material and recontouring the excavated areas to elevations that provide hydrologic conditions sufficient to support re-	**Prior to start of site remediation.** **Prior to excavation activities in Subarea 6.**	**Submit the restoration plan to USFWS, RWQCB and CDFW for approval.** **Harvest pickleweed cuttings from Subarea 6 and submit status reports to**

Regulations	Environmental Impacts	ARAR Specification	Timing	Monitoring / Reporting Action
ESA, 16 USC 1531 et seq.		establishment of coastal salt marsh wetlands. grading as necessary to maintain existing hydrologic conditions. • Revegetate with pickleweed cuttings harvested and rooted from Subarea 6 prior to vegetation clearing activities. Harvesting pickleweed cuttings from adjacent undisturbed coastal salt marsh wetlands areas requires: delineating locations on a map or plan, staking of locations by the biological monitor and approval by regulatory agencies (USFWS and CDFW) prior to the initiation of harvesting activities. Pickleweed cuttings will be collected by crews on foot and using non-motorized hand tools. No disturbance to coastal salt marsh wetlands areas outside of the designated harvest areas will be permitted. Harvesting activities will take place such that existing pickleweed cover in the harvest areas will not be reduced by more than 30 percent. • Remove and maintain invasive plant species less than 5%, • Monitor restoration annually for five years, or until vegetative performance criteria have been met and suitable salt marsh harvest mouse habitat has been re-established. The pickleweed collection/harvest will be assessed immediately prior to the initiation of harvesting to determine pre-harvest vegetative cover and will be monitored after harvesting to ensure that the areas return to pre-harvest pickleweed cover within five years. • Achieving performance criteria of at the end of five years would be a minimum of 90 percent cover of native wetland plant species [e.g., pickleweed (*Sarcocornia pacifica*), saltgrass (*Distichlis spicata*), fat hen (*Atriplex triangularis*), alkali heath (*Frankenia salina*)] with a minimum of 60 percent cover of pickleweed, and less than five percent cover of non-native plant species.	**Any post-excavation pickleweed cutting harvest.** **After restoration is completed on an annual basis for five years.**	**USFWS, RWQCB and CDFW.** **Biologist must designate harvest areas on a plan, field staking and obtain prior approval from USFWS and CDFW.** **Submit monitoring reports to USFWS, RWQCB and CDFW for any wetland impacts.**