

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: Investigation Area C2 Remedial Action Plan, Lennar Mare Island		PROJECT CODE: 201383-11
PROJECT ADDRESS: Former Mare Island Naval Shipyard	CITY: Vallejo	COUNTY: Solano
PROJECT SPONSOR: Lennar Mare Island, LLC 690 Walnut Avenue, Suite 100 Vallejo, California 94592	CONTACT: Neal Siler/Lennar Mare Island, LLC	PHONE: (707) 557-8224

APPROVAL ACTION UNDER CONSIDERATION BY DTSC:			
<input type="checkbox"/> Initial Permit Issuance	<input type="checkbox"/> Permit Renewal	<input type="checkbox"/> Permit Modification	<input type="checkbox"/> Closure Plan
<input type="checkbox"/> Removal Action Workplan	<input checked="" type="checkbox"/> Remedial Action Plan	<input type="checkbox"/> Interim Removal	<input type="checkbox"/> Regulations
<input type="checkbox"/> Other (specify):			

STATUTORY AUTHORITY:		
<input checked="" type="checkbox"/> California H&SC, Chap. 6.5	<input checked="" type="checkbox"/> California H&SC, Chap. 6.8	<input type="checkbox"/> Other (specify):

DTSC PROGRAM/ ADDRESS: 700 Heinz Avenue, Berkeley, CA 94710	CONTACT: Allan Fone	PHONE: (510) 540-3836
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Project Description

The California Department of Toxic Substances Control (DTSC) is considering approval of a Remedial Action Plan (RAP) for Investigation Area C2 (IA C2 RAP) within the Eastern Early Transfer Parcel (EETP) at Mare Island, pursuant to Health & Safety Code, Division 20, Chapter 6.8 section 25356.1 as submitted on October 1, 2019 by ERM-West, Inc. (ERM) on behalf of Lennar Mare Island, LLC. (LMI) (ERM 2019). Preparation and approval of the RAP is pursuant to the requirements of the Comprehensive Environmental Response, Compensation and Liability Act, as amended by the Superfund Amendments and Reauthorization Act of 1986; the National Oil and Hazardous Substances Pollution Contingency Plan in Title 40 of the Code of Federal Regulations, Part 300; and Division 20, Chapter 6.8 of the California Health and Safety Code. DTSC is the lead regulatory oversight agency for the investigation and remediation of contamination at the EETP.

The Draft IA C2 RAP evaluates and proposes remedies for contamination of soil, concrete, wood, impervious surfaces, sediment, and/or groundwater at more than 250 sites within the 115-acre portion of the former Mare Island Naval Shipyard called IA C2. IA C2 is a part of a larger parcel transferred from the United States Department of the Navy (Navy) to the City of Vallejo and then to LMI in 2002. Figure 1 shows the project site vicinity and location. Figures 2 through 5 show the location of all remediation sites in IA C2. These figures depict:

- Twenty-three sites where no physical remediation is required (RAP Alternative 1 – No Action); at these sites, current site conditions meet residential land use cleanup goals;
- Two sites where the proposed remedy involves 1) physical actions yet to be performed, such as removal of soil, sediment, asphalt, concrete, wood; power washing; and/or indoor air sampling; and 2) establishing/maintaining institutional controls such as a Land Use Covenant (LUC) and/or an Operation and

Maintenance (O&M) Agreement (RAP Alternative 3 - Excavation/Removal/Offsite Disposal with or without Institutional Controls); and

- The remainder of the sites (approximately 225 sites) where proposed remediation activities consist solely of establishing and maintaining institutional controls (RAP Alternative 2 – Institutional Controls).

Environmental effects from the proposed physical remediation activities are evaluated in this Initial Study. The No Action and Institutional Controls Alternatives would not result in a change in the physical environment. The proposed Institutional Controls Alternative would not change the land use from its current industrial/commercial usage, with the exception of westernmost portion of IA C2, which is proposed for unrestricted use; this area does not contain any sites requiring additional cleanup under DTSC regulatory authority other than administrative actions (release of Pre-Decision Covenant). Therefore, the No Action and Institutional Controls Alternatives are not evaluated further in this Initial Study.

As specified in the Mare Island Specific Plan, the City of Vallejo zoned the developed portion of Mare Island, in which IA C2 falls, as “Mixed Use Planned Development” (City of Vallejo 2013). Commercial and industrial land uses are planned for all sites within IA C2 (SWA Group 2000) that are evaluated in this Initial Study. The topography of IA C2 is generally flat, with elevations of about 20 to 35 feet above mean sea level in the western portion sloping to 4 to 10 feet above mean sea level in the eastern portion near Mare Island Strait (USGS 2018).

Field work at all but two of the sites within IA C2 that required remediation has been completed. These prior remedial activities are not evaluated by this Initial Study. In addition, site-specific remedies that have been evaluated in separate remedy decision documents and Initial Studies are not evaluated by this Initial Study. The two sites in IA C2 where the remedy requires or will likely require fieldwork to address contaminants of concern are listed in Table 1.

TABLE 1: Environmental Sites in Investigation Area C2 where Excavation/Removal/Offsite Disposal with or without Institutional Controls is Proposed (Alternative 3 in RAP)

Polychlorinated Biphenyl (PCB) Sites

- Building 116 UL#01 (Figure 2) – Wood, asphalt, concrete flooring, and wood building siding and column removal (indoor)

Other Sites of Environmental Concern

- Lead in Soil in the Vicinity of Building 206/208 (Figure 3) – Removal of soil and possible encapsulation areas as a contingency (outdoor)

Notes:

UL = Unknown Location; presence of site contamination was unknown at the time of the 2001 Consent Agreement between CalEPA/DTSC, City of Vallejo and LMI

The sites where DTSC has primary regulatory oversight are evaluated in this Initial Study. As specified in the RAP, one or more of the following remedial action objectives may be applicable for a site located in IA C2 (not all RAOs listed may be applicable for a particular site):

- Protecting human health and ecological receptors from unacceptable exposure to constituents in soil and/or groundwater (constituents can include various metals, polycyclic aromatic hydrocarbons (PAHs), pesticides, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), and/or PCBs) (applies to all sites in IA C2).
- Preventing significant degradation to groundwater caused by leaching of constituents in soil to groundwater (applies to all sites in IA C2).
- Maintaining concentrations of constituents so that the current and future beneficial use of groundwater is not unacceptably affected (applies to all sites in IA C2).
- Achieving compliance with applicable or relevant and appropriate regulatory requirements (applies to all sites in IA C2).
- Protecting human health from unacceptable exposure to PCBs in concrete, asphalt, wood block surfaces, and/or air (applies only to PCB sites).
- Mitigating unacceptable odor and nuisance concerns associated with TPH in shallow soil (applies only to certain sites).

- Preventing significant accumulation of VOCs, TPH-gasoline, and naphthalene in soil to soil gas (applies only to certain sites).

The RAP presents two sets of numerical, chemical-specific cleanup goals that will achieve the RAOs; these cleanup goals are consistent with the planned use of the site (unrestricted or commercial/industrial). The proposed cleanup remedies for the sites listed in Table 1, which have been selected to achieve these cleanup goals and applicable remedial action objectives, are expected to involve the following related activities:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks or stockpiling the material for reuse onsite, if appropriate. The purpose of these excavation/removal activities is to remove contaminated media to achieve applicable commercial/industrial cleanup goals to the greatest extent possible.
- If there are unforeseen conditions that prevent the complete removal of the lead-contaminated debris layer in the Vicinity of Building 206/208, then the contingency will consist of a multi-media cap (e.g., soil and asphalt) being placed over those portions where removal is not a viable option. The purpose of the capping is to protect human health and the environment by acting as an exposure barrier in areas where it is not feasible to excavate/remove media with contaminant levels above commercial/industrial cleanup goals.
- Characterization of stockpiled soil, concrete, asphalt, brick, sediment, and/or wood to determine if treatment is required prior to disposal.
- Transportation and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, and/or wood offsite to appropriate facilities (Table 2) based on waste characterization results and facility licensing. The site with the largest excavation area (Lead in Soil in the Vicinity of Building 206/208) would involve the excavation of up to approximately 8,100 cubic yards of lead-impacted soil. These excavation activities would require approximately 500 truck trips to transport materials off Mare Island; this level of project-related traffic would occur over the course of approximately 3 to 5 months (off-haul and fill import combined). This estimate is a “worst-case” scenario, and fewer truck trips would be needed for removal actions at the other site (between 2 and 30 truckloads). In total, the expected duration of the waste transportation activities would be approximately five months.
- Import of clean soil to backfill excavations, as necessary. The site with the largest excavation area (Lead in Soil in the Vicinity of Building 206/208) would involve the transportation of up to approximately 8,100 cubic yards of imported clean fill. Up to approximately 500 truck trips would be required to transport this clean backfill onto Mare Island, and up to 100 truckloads of asphalt could also be required. This level of project-related traffic would occur over the course of approximately 3 to 5 months (off-haul and fill import combined). This estimate is a “worst-case” scenario and fewer truck trips (between 2 and 30 truck trips) would be needed for removal actions at the other site. In total, the expected duration of the fill material transportation activities would be approximately five months; this period would occur concurrently with the waste transport activities noted in the prior bullet.
- Collection of soil, soil gas, groundwater, concrete, wipe, sediment, and/or indoor air samples to confirm that cleanup goals were met or, for solid media, to aid in determining any areas that require engineering controls and/or LUCs.
- Rinsing, washing, or otherwise cleaning impervious surfaces such as metal and collecting confirmation wipe samples to confirm the cleanup action achieved the applicable cleanup goals.
- Flushing and rinsing of inactive pipeline segments, pits, and/or catch basins and manholes, if encountered. No active pipelines are known to be present in the excavation area; however, a storm sewer line is present nearby within the Bagley Street alignment. Utility clearance will be undertaken using geophysical remote sensing techniques prior to any earth disturbing activities to identify the presence of any subsurface utilities. If any pipelines are identified during the utility clearance process, precautions will be undertaken to avoid encountering them to minimize the potential for releases or disruption of services. These precautions include avoiding subsurface disturbance in the immediate vicinity of the pipelines, or, if that is unavoidable, protect the pipelines in place using hand tools to expose the pipelines and excavate soils from their immediate vicinity. If necessary, active pipelines may be de-activated and removed to allow soil excavation immediately around and beneath them, then replaced after excavation completion.
- Capping pipelines, if inactive pipelines are encountered and capping is appropriate.

- Emplacing temporary traffic and engineering controls (i.e., fences, barricades, signs, caution marking, and/or traffic control staff/flaggers) as necessary. These measures would be implemented to protect the public from cleanup activities and cleanup equipment. Traffic controls may apply to vehicles, bicycles, and/or pedestrians. The duration of traffic and engineering controls would not exceed the duration of these related cleanup activities and no permanent alterations in the layout of fences, roads, sidewalks, or other pathways are anticipated as a result of the remediation projects.
- Recordation of Institutional controls. Institutional controls are legal documents such as LUCs that would govern future use of the property, restricted activities, O&M activities (as applicable), and monitoring requirements, as appropriate. The LUC would prohibit certain uses of a site without prior approval from DTSC. O&M activities would be implemented, but no other remedial actions would be performed. For the areas covered by the LUCs, there would be annual inspections and five-year reviews and reporting requirements to evaluate the effectiveness of the remedy to protect human health and the environment. LUCs can be considered partial and/or complete remedies for certain contaminated sites because they protect site occupants and the environment by limiting activities that could result in: 1) releases of contaminated materials; or 2) unacceptable exposures to chemicals remaining in place. All currently zoned commercial/industrial sites in IA C2 will be covered under an investigation area-wide LUC that restricts land use to commercial/industrial purposes and prohibits the following land uses: residences (including factory-built or mobile-home facilities), hospitals, public or private schools for persons less than 18 years of age, and day-care centers for children. Site-specific LUCs including PCB-specific and other Site-specific LUCs would also be established within IA C2. LUCs are not evaluated in this Initial Study because they do not require fieldwork and do not have the potential to result in environmental impacts to the sites.
- O&M activities associated with engineering control remedies at sites where contamination is left in place. Possible engineering controls are for sites located in IA C2 and include installation of an engineered soil cover, concrete cap, asphalt cap, and/or layers of epoxy paint. Additionally, the existing concrete or asphalt floor, ground surfaces, or electrical equipment may also be considered as a capping alternative. The integrity of the encapsulation systems would be maintained through periodic inspection and repair as established in a DTSC-approved O&M Plan. A financial assurance mechanism would also be implemented through an O&M Agreement.

These aforementioned activities associated with the proposed IA C2 remediation approach are commonly employed at remediation sites. These activities are not fully described in the RAP, which is a remedy selection document, but are, or will be, more fully described in remedial design work plans prepared for the two sites.

TABLE 2: Facilities to be Used for Disposal/Recycling of Remediation Wastes

Facility or Operator Name	Types of Waste Accepted			City	State
	NH	CA-H	RCRA-H		
Allied/Forward, Inc. (~70 miles from site)	X			Stockton	California
ECDC Landfill (~850 miles from site)	X			East Carbon	Utah
Envirosafe Services of Idaho, Inc. (~650 miles from site)			X	Boise	Idaho
Evergreen Environmental Services (~60 miles from site)		X		Newark	California
Keller Canyon Landfill (~30 miles from site)	X			Pittsburg	California
Kettleman Hills (~220 miles from site)	X	X		Kettleman City	California
Clean Harbors, Inc. (~270 miles from site)	X	X	X	Buttonwillow	California
Recology (~5 miles from site)	X	X	X	Vacaville	California
US Ecology, Inc. (~650 miles from site)			X	Beatty	Nevada
Waste Management – Altamont Pass (~60 miles from site)	X			Livermore	California
Vasco Road Landfill (~60 miles from site)	X			Livermore	California

NH = Non-Hazardous

CA-H = California-Hazardous, exceptions for certain types of contaminants may apply

RCRA-H = RCRA-Hazardous

Note: Each of these facilities is licensed to accept certain types of materials. Prior to selecting the appropriate disposal/recycling facility, the remediation wastes in question will be analyzed to determine which facility(ies) from the above list would be suitably licensed to accept those wastes.

Descriptions of the remedies for the sites evaluated in this Initial Study are provided below.

- *Indoor Cleanup Activities for PCB Site Building 116 UL#01*

Building 116 is located at the intersection of Railroad Avenue and Rickover Street (formerly 9th Street) and previously housed sheet metal operations, including a welding shop, and shipfitting operations. Building 116 contains a PCB site that is defined by stains on the floor of the building. The remedy at PCB Site Building 116 UL#01, as proposed in the RAP, would be to remove materials containing PCBs and TPH, including the wood block floor in its entirety, asphalt flooring (selective removal), the concrete subfloor and islands (scabbling in selective locations), and the wood building siding and columns (portions). Wood and concrete confirmation samples would be collected to document that commercial/industrial cleanup criteria have been achieved by the remedial actions. The wood building siding and columns removed would be replaced, and the concrete floor would be restored, as appropriate. PCB remediation activities would be conducted in accordance with the *Final Cleanup Plan for Building 116 Polychlorinated Biphenyl Site Unknown Location #01, Investigation Area C2, Eastern Early Transfer Parcel, Mare Island, Vallejo, California* (OTIE 2017).

If these remedial actions are not able to reduce PCB concentrations to the cleanup goal, an industrial-use-only, PCB-specific LUC would be developed, recorded, and implemented. The Building 116 Area would also be covered under the IA C2-wide Commercial/Industrial LUC, which would be recorded for the commercial/industrial portion of IA C2 to prohibit the following land uses: residences, day care centers for children, schools for persons under 18 years of age, and hospitals for humans.

- *Outdoor Cleanup Actions for Lead in Soil in the Vicinity of Building 206/208*

This site comprises elevated lead concentrations in fill material west of IWPS No. 6 (in the vicinity of Buildings 206 and 208) that were left in place after initial excavation activities conducted in 2003 and 2004. The excavation was not extended at that time to address these elevated lead concentrations, but additional evaluations of the extent of lead west of the pump station were performed in 2008 and 2009. As proposed in the RAP, the field actions for this site include complete excavation of the debris layer and lead in native soil. The exact amount of soil that may be feasibly removed from the site is unknown, but would likely be approximately 8,100 cubic yards, based on current site data. Excavating this soil would affect approximately 63,500 square feet of the ground surface. More than 500 trucks would be required to offhaul the excavated soil and more than 500 trucks would be required to backfill the excavations. Then the backfilled excavation area would be paved with asphalt. Approximately 100 truckloads would be required to import the asphalt. These cleanup actions are anticipated to take approximately 3 to 5 months to complete.

If unforeseen conditions prevent the complete removal of the lead-contaminated debris layer, then the contingency would consist of a multi-media cap (e.g., soil and asphalt) being placed over those portions where removal is not a viable option. In addition, this site would have a LUC that restricts land uses at the property and prohibits disturbance of the cap. This engineering control would also include inspection and monitoring requirements as established in a DTSC-approved O&M Plan and financial assurance requirements established in an O&M Agreement.

Project Schedule

As described above, the proposed project involves short-term construction activities, and does not involve any changes in current site operations. For the purpose of the impact evaluations, this Initial Study conservatively assumes that all the cleanup actions evaluated herein would:

- Be conducted independently and therefore occur intermittently;
- Take no more than approximately 3 to 5 months of continuous work, for each site, to complete;
- Be completed in 2019 (based on the current schedule); and
- If feasible, be scheduled for relatively dry seasons for outdoor cleanup actions (limited schedule restrictions on indoor cleanup actions).

The cleanup actions for all sites evaluated in this Initial Study were designed separately and would be implemented independently. However, some work may coincidentally occur at the same time. These actions may also coincide with other (non-IA C2) cleanup activities on the Lennar Mare Island site previously approved

under separate CEQA actions. Actual schedules for fieldwork would be included in the site-specific workplans that would be submitted to DTSC for approval prior to remedy implementation. The Mare Island Lennar Project Manager will develop and review a combined Master Schedule to ensure that independently scheduled construction activities do not result in a significant cumulative effect on any resource or element of the environment.

Project Controls

Standard project controls would be applied as needed during implementation of cleanup activities to reduce the potential for impacts to 1) site workers or nearby site tenants and residents due to impaired air or water quality, hazards, noise, and traffic; and 2) the environment in general, including air quality, surface soils (i.e., prevention of erosion), surface water, groundwater quality, and cultural resources. These project controls are summarized in the RAP as presented below, and would be included in more detail as appropriate in the site-specific remedial design workplans that would be submitted to DTSC for approval prior to implementation.

- Cleanup activities would generally be performed on standard work days (Monday through Friday) during daylight hours, and the daily work period would be between the hours of 7:00 a.m. to 8:00 p.m. Therefore, supplemental outdoor lighting would not be used. Vehicle traffic on and off Mare Island associated with the cleanup activity may be restricted, as necessary, to hours after the morning commute peak (after 9:00 a.m.) and before the afternoon commute peak (before 3:00 p.m.). Vehicle traffic would be assessed during the project activities to determine if these restrictions are necessary. Vehicles associated with the work would be required to follow all applicable speed limits and traffic laws. In addition, construction activities would adhere to applicable City of Vallejo noise control requirements.
- As a Project Control, cleanup activities would employ Best Management Practices (BMPs) to 1) suppress dust arising from these activities (such as the use of water application, and covering stockpiles); 2) eliminate/reduce the movement of silt or sediment from excavation areas into stormwater runoff through the use of silt fences, sandbag berms, hay bales, and grading (including the preparation and implementation of a Storm Water Pollution Prevention Plan, as appropriate); and 3) manage soil stockpiles built during construction to prevent the movement of silt into stormwater runoff through diversion of drainage from the stockpile areas, placement of sandbags and silt fencing, and sloping of stockpiles to encourage sheet flow. Construction activities would comply with City of Vallejo permit requirements and other local, state and federal air quality requirements related to the above issues.
- Project activities will comply with the City of Vallejo Climate Action Plan (2012) construction equipment reduction strategy, Chapter 4, Measure OR-2, which states that greenhouse gas emissions should be reduced from heavy construction equipment by implementing the following measures:
 - OR-2.1. 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]), or less. Clear signage shall be provided at all access points to remind construction workers of idling restrictions.
 - OR-2.2. Construction equipment shall be maintained per manufacturer's specifications.
 - OR-2.3. Planning and Building staff will work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, at a minimum, as appropriate to the construction project:
 - Substitute electrified equipment for diesel- and gasoline-powered equipment where practical.
 - Use alternatively fueled construction equipment on-site, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
 - Avoid the use on on-site generators by connecting to grid electricity or utilizing solar-powered equipment.
 - Limit heavy-duty equipment idling time to a period of 3 minutes or less, exceeding California Air Resources Board regulation minimum requirements of 5 minutes.
- Dumpsters or other closable containers would be used to contain solid and liquid waste. Wastes would be handled in accordance with state and federal regulations, including during offsite transport. In addition, handling of these materials would be consistent with the *Final Soil and Groundwater Management Plan*,

Lennar Mare Island, Vallejo, California (CH2M HILL 2001), which specifies the measures required for safe handling of impacted media generated at the site.

- Field activities would be governed by task-specific Health and Safety Plans (HASPs) specifying practices that would be employed by cleanup workers to avoid physical and chemical exposures during cleanup activities, including air monitoring, as necessary.
- Excavations would be backfilled with clean imported fill in a manner consistent with current engineering standards and in accordance with the *Final Soil and Groundwater Management Plan, Lennar Mare Island, Vallejo, California* (CH2M HILL 2001). All backfill materials would meet the applicable requirements of the Uniform Building Code and the standards and ordinances of the state and local governing authorities. Backfill material would be inert, non-expansive, free of organic matter, debris, rubble and other deleterious substances, and of such quality that it will compact thoroughly without excessive voids when watered and rolled.
- All activities involving subsurface disturbance will be performed in accordance with the Archaeological Treatment Plan for Mare Island, Vallejo, Solano County, California (PAR Environmental Services, Inc. [PAR Environmental] 2000) (ATP). As required by LMI, Contractors would be made aware of the potential for encountering items of potential archaeological interest during excavation activities. LMI and its Contractors will receive Native American Cultural Resources Sensitivity Training from the Yocha Dehe Wintun Nation prior to beginning any intrusive field activities.
- In the event of an accidental discovery of potential cultural or archaeological resources, LMI's Contractors shall immediately suspend excavation or other intrusive activities and cordon off the area within a 100-foot buffer zone. LMI and its archaeological contractor, PAR Environmental, will be consulted to determine the best course of action regarding the potentially significant items. In addition, the DTSC Project Manager would be notified. If it is determined that the objects are Native American in origin, DTSC would contact the Yocha Dehe Wintun Nation. In accordance with the Native American Cultural Resources Sensitivity Training, LMI and its contractors will not touch or move the artifacts/remains, and will not take photographs or videos of the artifacts/remains. After discussion with the Tribal Contacts and or their respective Cultural Resources Managers and in collaboration with DTSC and LMI, measures will be implemented as deemed necessary to record and/or protect the cultural or archaeological resources. Work in the area of any such discovery would only be allowed to continue after completion of the archaeological/tribal consultation.
- In the event of an accidental discovery of human remains during ground disturbing activities, excavation or disturbance of the site or any nearby area shall stop immediately, and the County Coroner will be notified in accordance with applicable laws and regulations (specifically H&SC Section 7050.5). The coroner will determine disposition in 48 hours. If the coroner determines that the remains are Native American, the coroner will be responsible for contacting the California Native American Heritage Commission (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); H&SC section 7050.5). If Native American human remains or any associated grave goods are found, procedures would be implemented as required in accordance with Section 106 of the National Historic Preservation Act and Section 2(3) of the Native American Graves Protection and Repatriation Act, which requires work to be stopped in the area of the discovery. (see also above bullet)
- Site controls would be implemented to prevent unauthorized persons from entering portions of a Site where such entry could pose a threat to themselves or others, or where such entry could interfere with the project investigation or remediation activities at the site. These site controls would be implemented in accordance with the *Site Control Plan, Lennar Mare Island, Update 1* (CH2M HILL 2003b).
- No materials or equipment would be stored where they could interfere with the free and safe passage of facility personnel and/or tenants.
- Trucks related to the cleanup actions would be required to enter and exit Mare Island using the north access location where Railroad Avenue meets Highway 37. No other ingress or egress locations will be allowed. Barges will not be used to remove contaminated soil, or bring in materials or clean fill material. Truck exteriors/tires will be cleaned as needed to avoid soil tracking off the site onto public roadways. Truck

inspections will be conducted to confirm 1) that the vehicle is in safe operating condition; and 2) the material being transported is secured and will not be released from the vehicle during transport.

References

CH2M HILL. 2001. *Final Soil and Groundwater Management Plan, Lennar Mare Island, Vallejo, California*. November.

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City of Vallejo. 2013. *Mare Island Specific Plan*. Adopted March 1999, last amended August 2013. Accessed online at: <http://www.ci.vallejo.ca.us/common/pages/DisplayFile.aspx?itemId=32082>

ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.

Oneida Total Integrated Enterprises (OTIE). 2017. *Final Cleanup Plan for Building 116 Polychlorinated Biphenyl Site Unknown Location #01, Investigation Area C2, Eastern Early Transfer Parcel, Mare Island, Vallejo, California*. June 3.

SWA Group (SWA). 2000. *Preliminary Land Use Plan*. May 23.

United States Geological Survey (USGS). 2018. USGS 1:62500-scale Quadrangle for Mare Island, CA 1916. Interactive topographic map Accessed 8/29/18 at: <https://www.sciencebase.gov/catalog/item/imap/5a8a4156e4b00f54eb3eef22>

ENVIRONMENTAL IMPACT ANALYSIS:

1. Aesthetics

Project Activities Likely to Create an Impact on Aesthetics:

Project activities that could potentially impact aesthetics are construction activities that could interfere with or degrade scenic views, including:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water and/or wood to appropriate facilities based on waste characterization and import of clean soil.
- Site restoration, including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.
- Sample collection of various media (soil, groundwater, asphalt, wood and/or concrete) involving heavy equipment.

Description of Baseline Environmental Conditions:

IA C2 is located in the eastern portion of Mare Island (Figure 1). The approximately 115-acre area is bound by industrial areas and Mare Island Strait to the east, by industrial areas to the north and south, and by residential areas to the west. Most of IA C2 is paved or developed with industrial structures constructed as part of Shipyard operations. Many of these buildings are currently occupied, with commercial/industrial uses. As is typical of industrial areas elsewhere, heavy equipment and other materials (wood, metal, glass, concrete, electrical equipment, paint, and other industrial supplies) are currently stored in IA C2, and truck traffic is associated with the businesses present in IA C2. Except for a residential area in the westernmost portion of IA C2, the remainder of the IA is slated for future commercial/industrial land use. The ground surface outside most structures is paved, except for a few small landscaping areas and contains several railroad spurs (ERM 2019). Numerous assessments have been performed to determine which features on Mare Island are historic resources. The historic district is defined in the Mare Island Specific Plan (City of Vallejo 2013); no portions of the Project would be located in this district.

Additionally, designated historic resources have been identified on Mare Island (WESTDIV and City of Vallejo 1998); no portions of the Project would be located on or near these resources.

The Solano County General Plan (Solano County 2008) and City of Vallejo General Plan (City of Vallejo 2017) identify scenic resources and viewsheds within the county/city and include policies and programs to protect them. As noted in the City of Vallejo General Plan (City of Vallejo 2017) Mare Island Strait represents one of several scenic views within Vallejo. The other views listed in the General Plan (San Pablo Bay, the waterfront, Sulphur Springs Mountain, the Vaca Mountains, White Slough, the Napa River Wetlands, Sky Valley, and the city itself) are not within the same viewshed as IA C2. The Solano County General Plan discussion of scenic resources includes a map of scenic roadways throughout the County (Solano County 2008). Portions of Highway 37 and Interstate 80, which pass near Mare Island, are depicted as scenic roadways on that map. However, IA C2 is more than a mile from these roadways at its closest point. The project sites are not within the corridor of a designated state scenic highway and are not visible from scenic highways.

Existing sources of light/glare include exterior lighting on buildings in IA C2, headlights on vehicles operating outside daylight hours, and reflection of sunlight off glass windows or other shiny surfaces.

Analysis as to whether or not project activities would:

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

Impact Analysis:

The project sites are currently developed and used for commercial and industrial purposes that include the use of large trucks and heavy equipment. Additional equipment such as excavators, trucks, trailers, drill rigs, portable tanks, and other construction equipment would be present during the cleanup activities in IA C2, but would be limited in number and not readily distinguishable from existing equipment at the sites. Soil, concrete, asphalt, brick, sediment, and/or wood that would be temporarily stockpiled at the sites would similarly not be readily distinguishable from other storage at the sites. Project-related construction equipment and stockpiles would be present onsite for a short period of time (3 to 5 months) and would not represent a significant impediment to views of the Mare Island Strait, the only scenic vista identified in the project vicinity, or other scenic vistas. Given the distance of the project sites from established scenic highways (more than one mile), project-related activities would not be visible from those highways to such an extent that they would degrade the view. Affected areas would be restored to their current grade, and pavement would be reinstalled over areas where it currently exists. Therefore, cleanup actions would have a Less Than Significant effect on a scenic vista.

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:

The field actions evaluated in this Initial Study would not affect scenic resources, including but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway, none of which are present in the Project area. Some of the field actions would occur indoors where those actions would not be readily visible. No portions of the Project would be located in the historic district defined in the Mare Island Specific Plan and would thus not affect any scenic resources associated with the historic district. Therefore, cleanup actions would have No Impact on scenic resources.

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 for these sites would involve removing contaminated soil, concrete, asphalt, brick, sediment, and/or wood at indoor and outdoor locations or cleaning surfaces. Activities associated with these cleanup actions that could be visible to persons not involved in the cleanup work include: 1) excavation, backfilling, and surface restoration at outdoor locations; and 2) vehicular traffic associated with offsite transport of contaminated media and onsite transport of backfill materials (for both outdoor and indoor sites). The outdoor areas where remediation activities would occur encompass a small area (approximately 1.5 acres within the 115 acres of IA C2). The cleanup actions would be short in duration (3 to 5 months).

No structures would be demolished or visibly modified as part of this project. No portions of the Project would be located in the historic district defined in the Mare Island Specific Plan, and no historic buildings would be affected. Work occurring inside the buildings would be relatively minor and is not anticipated to impact the aesthetics of the buildings.

The short duration of the activities and temporary increase in vehicle traffic associated with the Project would not substantially affect the visual character of the site or the routes to the disposal/recycling facilities. Project activities would include project controls to avoid unacceptable dust emissions or soil/chemical releases that could temporarily degrade the site's visual character during construction. Because site restoration would be performed upon completion of the remedies, the visual character of the sites after completion of the work would be unchanged from baseline conditions. Therefore, no significant degradation of the existing visual character or quality of the sites would occur, and the impact from the Project would be Less Than Significant.

Conclusion:

- ☐ 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:

Field 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). 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 field activities, any light or glare effects would not be significant. The project does not involve the construction of buildings/structures that would create new long-term sources of lighting or glare. Therefore, impacts from the Project associated with light or glare would be Less Than Significant.

Conclusion:

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

References Used:

- City of Vallejo. 2013. *Mare Island Specific Plan*. Adopted March 1999, last amended August 2013. Accessed online at: <http://www.ci.vallejo.ca.us/common/pages/DisplayFile.aspx?itemId=32082>
- City of Vallejo. 2017. *Propel Vallejo: General Plan 2040*. August 29. Accessed online 9/4/18 at: <http://www.cityofvallejo.net/common/pages/DisplayFile.aspx?itemId=12181697>
- ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.
- Naval Facilities Engineering Command, Western Division and the City of Vallejo (WESTDIV and City of Vallejo). 1998. *Mare Island Naval Shipyard Disposal and Reuse Final Environmental Impact Statement/Environmental Impact Report*. April.
- Solano County. 2008. *Solano County General Plan. Chapter 4 – Resources*. Accessed online at: <http://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=6494>

2. Agriculture and Forest Resources

Project Activities Likely to Create an Impact on Agricultural or Forest Resources: None.

Description of Baseline Environmental Conditions/Explanation for No Impact Finding:

The remediation sites are developed with buildings/structures and paved areas. As specified in the Mare Island Specific Plan, the City of Vallejo zoned the developed portion of Mare Island, in which IA C2 falls, as “Mixed Use Planned Development” (City of Vallejo 2013). There are no existing agricultural uses, forest lands, Timberland, or timberland zoned for Timberland production in IA C2. Under the California Department of Conservation Division of Land Resource Protection’s Farmland Mapping and Monitoring program, maps have been prepared to depict:

1) locations of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance throughout the state; and
2) lands subject to a Williamson Act contract. These maps indicate the following:

- Prime Farmland, Unique Farmland, or Farmland of Statewide Importance are not present on Mare Island, which is classified as Urban and Built-up Land (California Department of Conservation 2017a).
- No lands on Mare Island are subject to a Williamson Act contract (California Department of Conservation 2017b).

Consequently, the Project would have No Impact on agriculture and forest resources, and no further analysis of impacts is deemed necessary.

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:

Conclusion:

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

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

Impact Analysis:

Conclusion:

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

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

Impact Analysis:

Conclusion:

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

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

Impact Analysis:

Conclusion:

- ☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated

- ☐ Less Than Significant Impact
☒ No Impact

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

Impact Analysis:

Conclusion:

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

References Used:

California Department of Conservation. 2017a. Farmland Mapping and Monitoring Program website. Map entitled *Solano County Important Farmland 2016*. Accessed 8/29/18 at:

<ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/sol16.pdf>

California Department of Conservation. 2017b. Land Conservation Act website, Map entitled *Solano County Williamson Act FY 2013/2014*. Accessed 8/29/18 at:

ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Solano_13_14_WA.pdf

City of Vallejo. 2013. *Mare Island Specific Plan*. Adopted March 1999, last amended August 2013. Accessed online at: <http://www.ci.vallejo.ca.us/common/pages/DisplayFile.aspx?itemId=32082>

Mare Island Naval Shipyard (MINS). 1996. *Historical Survey of Mare Island Naval Complex, 1994-1995*. Volumes I - IV. February.

Solano County. 2008. Solano County General Plan. Chapter 3 – Agriculture. Accessed online at: <http://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=6493>

3. Air Quality

Project Activities Likely to Create an Impact on Air Quality:

Project activities that could emit dust, fuel combustion exhaust, and other air pollutants, and therefore potentially impact air quality, include:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water and/or wood to appropriate facilities (based on waste characterization) and importation of clean soil.
- Site restoration, including backfill of all excavated areas with imported clean soil and replacement of pavement to match pre-excavation conditions.

For the cleanup activities included in this evaluation, the anticipated duration is up to 3 to 5 months per site. Less than 1.5 acres of land, in total, would be disturbed by these activities. The sources of air emissions would include primarily exhaust from heavy construction equipment and vehicles, such as haul trucks, and dust from soil excavation and other material transfer activities. As such, these activities can be characterized as project construction activities.

Description of Baseline Environmental Conditions:

The project is within the Carquinez Strait Climatological Subregion. This subregion is the only sea level gap between the Bay and the Central Valley. Prevailing winds are from the west in the Carquinez Strait. During the summer and fall months, high pressure offshore coupled with low pressure in the Central Valley causes marine air to flow eastward through the Carquinez Strait. The wind is strongest in the afternoon. Afternoon wind speeds of 15 to 20 miles per hour (mph) are common throughout the region. Sometimes atmospheric conditions cause air to flow

from the east. East winds usually contain more pollutants than the cleaner marine air from the west. In the summer and fall months, this can cause elevated pollutant levels to move into the central San Francisco Bay Area Air Basin (SFBAAB) through the strait. These high-pressure periods are usually accompanied by low wind speeds, shallow mixing depths, higher temperatures and little to no rainfall (BAAQMD 2017a).

Summer mean maximum temperatures reach about 90° F in the subregion. Mean minimum temperatures in the winter are in the high 30's. Temperature extremes are especially pronounced in sheltered areas farther from the moderating effects of the strait itself, e.g. at Fairfield (BAAQMD 2017a).

Many industrial facilities with significant air pollutant emissions (e.g., chemical plants and refineries) are located within the Carquinez Strait Region. In the immediate vicinity of the project site there are some light industrial facilities (painting, coating, milling), and auto repair shops. To the north is State Route 37, and to the east is Interstate 80. Across the Carquinez Strait to the south is a bulk products terminal and the Phillips 66 Refinery. The pollution potential of this area is often moderated by high wind speeds. However, upsets at industrial facilities can lead to short-term pollution episodes, and emissions of unpleasant odors may occur at any time. There was only one air quality incident in the Vallejo-Mare Island area in the past three years, which was an odor incident in September 2016 related to the Phillips 66 Refinery that was experienced in the Vallejo area (BAAQMD 2017a).

Receptors downwind of these facilities could experience more long-term exposure to air contaminants than individuals elsewhere. There are sensitive receptors (residences) directly west of the project area, although these are not downwind based on the predominant wind direction of southwesterly. In addition, there are residences approximately one-half mile to the east, across the Mare Island Strait. Areas of the subregion that are traversed by major roadways (e.g. State Route 37 and Interstate 80) may also be subject to higher local concentrations of carbon monoxide and particulate matter, as well as certain toxic air contaminants (TACs) such as benzene from on-road vehicles.

The main pollutants of concern in the Bay Area are particulate matter and ozone. Particulate matter, in diameters of 2.5 and 10 micrometers (fine and inhalable, respectively), is detrimental to health because it can get lodged in the lungs and is not filtered out by the respiratory system. Ozone causes problems to lung function and the respiratory system. The Bay Area as a whole does not attain ambient standards for these two pollutants. The Bay Area does not attain the federal and state ozone standards, the federal and state PM_{2.5} (fine particulate matter) standards, or the state PM₁₀ (inhalable particulate matter) standards. Other pollutants, known as criteria pollutants, include carbon monoxide, oxides of nitrogen, sulfur dioxide, and lead. Oxides of nitrogen (NO_x) and reactive organic gases (ROG) are precursors to ozone formation. Ambient air quality standards at the state and national level are shown in Table 3-1 below.

Mare Island is located within the San Francisco Bay Area Air Basin, which includes Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara and Napa Counties, and a portion of Solano and southern Sonoma Counties. The management of air quality in the San Francisco Bay Area is primarily the responsibility of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD has published guidelines for analysis and mitigation of impacts from projects within its jurisdiction. The methodology from the BAAQMD 2017 CEQA Air Quality Guidelines (BAAQMD 2017a) was used to evaluate impacts from the proposed project. The "Thresholds of Significance" from this document are presented in Table 3-2, below. In addition, these Thresholds of Significance were used to determine the significance of each impact discussed in sections (a) through (d) below. For the purposes of this project, emissions were calculated using the California Emissions Estimation Model® (CalEEMod) to demonstrate that the impacts are below the 2017 CEQA Thresholds of Significance for construction impacts. The CalEEMod model was developed for the California Air Pollution Control Officers Association and is accepted by air districts throughout the State.

The 2017 BAAQMD CEQA Guidelines present average daily emissions Thresholds of Significance for construction projects, such as this project. These thresholds are presented in Table 3-2 below. It should be noted that the daily emission thresholds in Table 3-2 are average daily emissions. Thus, even if certain peak days have emission over the identified thresholds, as long as the average daily emissions are below these thresholds, the impacts are considered less than significant. The BAAQMD Guidelines also include Best Management Practices that are to be employed during construction projects; these BMPs are presented in Table 3-3.

The 2017 BAAQMD CEQA Guidelines also discuss the appropriate way to evaluate whether a project contribution to the cumulative air quality impact is considerable (BAAQMD Guidelines Section 2, page 2-1):

"By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the

cumulative impact is considerable, then the project's impact on air quality would be considered significant."

"In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary."

Additionally, Section 2, page 2-6 states:

"Table 2-4 presents the Thresholds of Significance for construction-related criteria air pollutant and precursor emissions. If daily average emissions of construction-related criteria air pollutants or precursors would exceed any applicable Threshold of Significance listed in Table 2-4, the project would result in a significant cumulative impact."

And, as noted above, the 2017 BAAQMD CEQA Guidelines state (at p. 8-2):

"If daily average emissions of construction-related criteria air pollutants or precursors would not exceed any of the Thresholds of Significance, the project would result in a less-than-significant impact to air quality."

Table 3-1 – Ambient Air Quality Standards and Designations

Ambient Air Quality Standards and Designations												
Pollutant	Averaging Time	California				National Standards ^a						
		Standards (ppm) ^{b, c}	Standards (µg/m ³) ^{b, c}	Standards (mg/m ³) ^{b, c}	Attainment Status ^d	Primary (ppm) ^{c, e}	Primary (µg/m ³) ^{c, e}	Primary (mg/m ³) ^{c, e}	Secondary (ppm) ^{c, f}	Secondary (µg/m ³) ^{c, f}	Secondary (mg/m ³) ^{c, f}	Attainment Status ^g
Ozone	1-hour	0.09	180	0.18	N (serious)	– ^h	– ^h	– ^h	–	–	–	– ^h
Ozone	8-hour	0.07	137	0.137	–	0.075	147	0.147	0.075	147	0.147	N
Carbon Monoxide (CO)	1-hour	20	23000	23	A	35	40000	40	–	–	–	U/A
Carbon Monoxide (CO)	8-hour	9	10000	10	A	9	10000	10	–	–	–	U/A
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.03	57	0.057	–	0.053	100	0.1	0.053	100	0.1	U/A
Nitrogen Dioxide (NO ₂)	1-hour	0.18	339	0.339	A	–	–	–	–	–	–	–
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	–	–	–	–	0.03	80	0.08	–	–	–	A
Sulfur Dioxide (SO ₂)	24-hour	0.04	105	0.105	A	0.14	365	0.365	–	–	–	A
Sulfur Dioxide (SO ₂)	3-hour	–	–	–	–	–	–	–	0.5	1300	1.3	A
Sulfur Dioxide (SO ₂)	1-hour	0.25	655	0.655	A	–	–	–	–	–	–	–
Respirable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	–	20	0.02	N	– ^h	– ^h	– ^h	–	–	–	U
Respirable Particulate Matter (PM ₁₀)	24-hour	–	50	0.05	N	–	150	0.15	–	150	0.15	U
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	–	12	0.012	N	–	15	0.015	–	15	0.015	N ^j
Fine Particulate Matter (PM _{2.5})	24-hour	–	–	–	–	–	35	0.035	–	35	0.035	N ^j
Lead ⁱ	30-day average	–	1.5	0.0015	A	–	–	–	–	–	–	–
Lead ⁱ	Calendar quarter	–	–	–	–	–	1.5	0.0015	–	1.5	0.0015	–
Sulfates	24-hour	–	25	0.025	A	–	–	–	–	–	–	–
Hydrogen Sulfide	1-hour	0.03	42	0.042	U	–	–	–	–	–	–	–
Vinyl Chloride ⁱ	24-hour	0.01	26	0.026	–	–	–	–	–	–	–	–
Visibility-Reducing Particle Matter	8-hour	see below ^k	see below ^k	see below ^k	U	–	–	–	–	–	–	–

^a National standards (other than ozone, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM₁₀ 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The PM_{2.5} 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

^b California standards for ozone, CO (except Lake Tahoe), SO₂ (1- and 24-hour), NO₂, PM, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^c Concentration expressed first in units in which it was promulgated [i.e., parts per million (ppm) or micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$)]. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

^d Unclassified (U): a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment. Attainment (A): a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a 3-year period. Nonattainment (N): a pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area. Nonattainment/Transitional (NT): is a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the standard for that pollutant.

^e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

^f National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

^g Nonattainment (N): any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant. Attainment (A): any area that meets the national primary or secondary ambient air quality standard for the pollutant. Unclassifiable (U): any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

^h The 1-hour ozone NAAQS was revoked on June 15, 2005 and the annual PM₁₀ NAAQS was revoked in 2006.

ⁱ ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for this pollutant.

^j U.S EPA lowered the 24-hour PM_{2.5} standard from 65 $\mu\text{g}/\text{m}^3$ to 35 $\mu\text{g}/\text{m}^3$ in 2006. EPA issued attainment status designations for the 35 $\mu\text{g}/\text{m}^3$ standard on December 22, 2008. EPA has designated the Bay Area as nonattainment for the 35 $\mu\text{g}/\text{m}^3$ PM_{2.5} standard. The EPA designation will be effective 90 days after publication of the regulation in the Federal Register.

^k Extinction coefficient of 0.23 per kilometer —visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) because of particles when the relative humidity is less than 70%.

Table 3-2. Thresholds of Significance for Construction-Related Criteria Air Pollutants and Precursors

Pollutant	Average Daily Emissions Threshold of Significance (pounds per day)
ROG	54
NO _x	54
PM ₁₀	82 (applies to construction exhaust emissions only)
PM _{2.5}	54 (applies to construction exhaust emissions only)

Notes:

ROG = Reactive Organic Gases

NO_x = Nitrogen Oxide

PM₁₀ = Particles with an aerodynamic diameter less than 10 micrometers (μm)

PM_{2.5} = Particles with an aerodynamic diameter less than 2.5 μm

Table 3-3. Basic Construction Best Management Practices

Basic Construction Measures Recommended for ALL Proposed Projects	
1.	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2.	All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3.	All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4.	All vehicle speeds on unpaved roads shall be limited to 15 mph.
5.	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6.	Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7.	All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8.	Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Source: Table 8-2 from BAAQMD 2017 CEQA Guidelines.

*Analysis as to whether or not project activities would:**a. Conflict with or obstruct implementation of the applicable air quality plan.***Impact Analysis:**

As noted above, the applicable air quality plan for the project area is the Bay Area 2017 Clean Air Plan (BAAQMD 2017b). Project-related activities that could affect air quality are temporary in nature (anticipated 3- to 5-month duration). Construction associated with the Project would result in emissions of ozone precursors (NO_x and ROG), particulate matter, air toxics, and greenhouse gases (see Section 7 of this checklist). However, the Project would be implemented consistently with the control strategies contained in the Clean Air Plan.

The Project has been designed to reduce air emissions (NO_x, ROG, and particulate matter among other pollutants) during construction as much as possible. Best management practices specified in the RAP would include:

- Suppressing dust arising from these activities (such as the use of water application and covering stockpiles).
- Dumpsters or other closable containers would be used to contain solid and liquid waste. Wastes would be handled in accordance with state and federal regulations, including during offsite transport. In addition, handling of these materials would be consistent with the Final Soil and Groundwater Management Plan, Lennar Mare Island, Vallejo, California (CH2M HILL 2001), which specifies the measures required for safe handling of impacted media generated at the site.
- Field activities would be governed by task-specific Health and Safety Plans (HASPs) specifying practices that would be employed by cleanup workers to avoid physical and chemical exposures during cleanup activities, including air monitoring, as necessary.

Construction activities would also be required to employ BMPs established by BAAQMD to reduce emissions (Table 3-3). Project-related emissions from construction equipment, haul truck trips, and fugitive dust from earthmoving were estimated using the CalEEMod emissions estimation model (output file provided in Attachment B). As shown in Table 3-4, those emissions would be less than the BAAQMD CEQA significance thresholds.

Table 3-4. Comparison of Construction-Related Emissions of Criteria Pollutants and Precursors to BAAQMD's Thresholds of Significance

Criteria Pollutant or Precursor	Average Daily Construction Emissions	BAAQMD CEQA Thresholds
NO _x (lb/day)	37.3	54
PM ₁₀ Exhaust (lb/day)	0.9	82
PM _{2.5} Exhaust (lb/day)	0.9	54
ROG (lb/day)	2.3	54

Note: Emissions calculated using the CalEEMod emissions estimation model. The BAAQMD CEQA Thresholds shown are those listed in 2017 BAAQMD CEQA Guidelines, Table 2-4 "Thresholds of Significance for Construction-Related Criteria Air Pollutants and Precursors."

The construction emissions for off-road heavy equipment, haul trucks, and construction employee commute trips were estimated by using the CalEEMod emissions estimation model, which incorporates emission factors from the CARB OFFROAD program for heavy equipment and from the CARB EMFAC2014 program for on-road vehicles. The project was assumed to be under way in 2018 for the purposes of the CalEEMod analysis, and CalEEMod was run for one representative year (2018). This approach is suitable for comparison to the BAAQMD CEQA thresholds since they are based on average daily emissions.

Inputs to CalEEMod for both off-road and on-road vehicles, such as miles traveled and number of round trips, were based on the description of the equipment and vehicle schedule for the proposed Project (also included in Attachment B).

The recommended measure for determining project support of the goals of the Clean Air Plan is to evaluate consistency with District-approved CEQA thresholds of significance (Section 9.1 of the 2017 BAAQMD CEQA Air Quality Guidelines). Therefore, since project emissions would be less than the District-approved CEQA thresholds of significance, the project would be consistent with the Clean Air Plan.

Additionally, during fieldwork, air monitoring would be conducted (if appropriate based on the site-specific HASP developed in accordance with 29 Code of Federal Regulations 1926 Subpart D and the Occupational Health and Safety Administration requirements) to confirm that there is no exposure of potentially hazardous particulates to site workers and the public. Prior to project implementation, a qualified health and safety professional would evaluate available data to identify known site contaminants and select proper air monitoring equipment that would be used during cleanup activities. Air monitoring would alert cleanup workers if emissions exceed levels protective of human health, and work would cease until controls were implemented to reduce those emissions to appropriate levels.

In summary, Project activities would be unlikely to conflict with or obstruct implementation of the applicable air quality plan for the following reasons:

- Project-related emissions would be less than the BAAQMD CEQA significance thresholds.
- Construction activities would incorporate dust suppression measures and would employ BMPs established by BAAQMD to reduce emissions.
- Air monitoring would be conducted during construction based on potential for airborne hazardous particulates, if air monitoring during construction indicates that emissions are higher than thresholds, work would cease.

Therefore, the project would result in a Less Than Significant Impact.

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:

Construction associated with the Project would result in the following types of emissions, which are discussed below:

- Fugitive dust from ground-disturbing activities (PM₁₀ and PM_{2.5})
- Ozone precursors (ROG and NOx) and particulates (PM₁₀, and PM_{2.5}) from vehicle and construction exhaust

Fugitive Dust (PM₁₀ and PM_{2.5})

Construction emissions of fugitive dust (PM₁₀) can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors. Despite this variability, multiple feasible control measures can be reasonably implemented to reduce fugitive PM₁₀ emissions, as specified in the Guidelines. The BAAQMD 2017 CEQA Guidelines (at Table 2-1 of that document) state that a project's fugitive dust impact would be less than significant with implementation of BMPs described in the guidelines for dust control.

Vehicle/Construction Equipment Exhaust

Proposed Project activities that would generate air pollutant emissions include heavy construction equipment use, haul truck travel and construction employee commute trips. Soil remediation would also emit ROG from disturbed, contaminated soil. The impact from organic and toxic emissions from disturbed soil impact is discussed under (d) below. This discussion focuses on the criteria pollutant emissions from construction activities involved in the remediation.

The best management practices noted above and in the BAAQMD Guidelines are standard industry practice, and would be implemented to reduce fugitive dust impacts, consistent with the requirements from the 2017 BAAQMD CEQA Guidelines. Therefore, based on the expected effectiveness of dust control measures, the short duration of field activities, and the emission estimated provided above in Table 3-4, project-related impacts would be Less Than Significant.

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:

The Project region is non-attainment for ozone, PM₁₀ and PM_{2.5} (BAAQMD 2018). NOx and ROG are ozone precursors. Thus, the pollutants to be addressed here – ROG, NOx, PM₁₀ and PM_{2.5} – are the same criteria pollutants and precursors discussed above in the baseline discussion.

As shown above in Table 3-4, project-related emissions of these non-attainment pollutants would be less than significant under BAAQMD's Thresholds of Significance. Thus, the Project would not result in a cumulatively considerable net increase.

As presented in Item b. above, implementation of particulate matter control measures recommended by BAAQMD would ensure that the net cumulative increase associated with fugitive dust emissions would be reduced to a less-than-significant level. Therefore, project emissions 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 sensitive receptors in the project vicinity are the occupants of the housing and school facilities on Mare Island. Below is a listing of the distances to the nearest sensitive receptors to any of the sites evaluated by this Initial Study:

- Residential housing: located approximately 1,600 feet from the closest indoor project site and 600 feet from the closest outdoor project site.
- School: located approximately 1,000 feet from the closest project site.

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

- Project-related emissions would not lead to substantial pollutant concentrations, as demonstrated using the CalEEMod emissions estimation model, which found the emissions to be less than the BAAQMD CEQA significance thresholds (Table 3-4).
- A limited number of construction vehicles or equipment would operate simultaneously.
- The project activities assessed in this evaluation are short term and would last up to 3 to 5 months per site.
- Standard construction practices, such as using a water truck and covering soil stockpiles, would be used for dust suppression.

Therefore, impacts to sensitive receptors would be Less Than Significant.

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:

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. The majority of project activities would be conducted at a substantial distance (more than 400 feet) from any sensitive receptors, as mentioned above, and would be short in duration (between 3 to 5 months per site). 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

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4. Biological Resources

Project Activities Likely to Create an Impact to Biological Resources:

Project activities that could directly and/or indirectly impact biological resources in IA C2 and the surrounding area include the following construction-related activities:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration, including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.

Description of Baseline Environmental Conditions:

The dominant habitat types found at or around Mare Island include intertidal mudflats, open water, tidal wetlands, nontidal wetlands, the inactive former dredge ponds and uplands. 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). All onsite project activities would be conducted on developed areas with commercial or industrial uses and no riparian habitat or other sensitive natural communities are present within the project boundaries (United States Fish and Wildlife Service [USFWS] 2014).

The following are local policies or ordinances that cover the Project Area:

- The City of Vallejo Tree Ordinance requires a tree removal permit to remove trees within the city limits, this ordinance would apply to the Project area (City of Vallejo 2018b).
- 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).
- The General plan for the City of Vallejo (City of Vallejo 2018a) has two policies relating to biological resources “Policy NBE-1.1 *Natural Resources. Protect and enhance hillsides, waterways, wetlands, occurrences of special-status species and sensitive natural communities, and aquatic and important wildlife habitat through land use decisions that avoid and mitigate potential environmental impacts on these resources to the extent feasible*” and Policy NBE-1.2 “*Sensitive Resources. Ensure that adverse impacts on sensitive biological resources, including special-status species, sensitive natural communities, and wetlands are avoided and mitigated to the greatest extent feasible as development takes place.*”
- As discussed in the Solano County General Plan (Solano County 2008), habitat types throughout the County support rare or endangered animal and plant species. The County has developed the Solano Multi-Species Habitat Conservation Plan (HCP) to protect these species. The HCP identifies priority and nonpriority habitat areas; the General Plan focuses on priority habitat areas for conservation and preservation. As illustrated in maps provided in the General Plan, none of these priority habitat areas fall within Mare Island. According to the Draft HCP, the Project area falls within the Zone 1 – Urban Zone designation (SCWA 2012). The Solano County General Plan also outlines the various plans and programs that have been established to protect marshes and the Sacramento-San Joaquin Delta area. The closest protection area to the project sites (White Slough Planning Area) is located across Mare Island Strait from Mare Island (Solano County 2008). No protected areas are located on Mare Island based on the map provided in the General Plan.

Terrestrial Habitats

The terrestrial areas of IA C2 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). A few scattered ornamental trees and patches of non-native annual grasses exist within the IA C2 footprint; however, the site is almost entirely covered with asphalt and buildings. Due to the completely developed nature of the Project Area, it is not considered a wildlife corridor that would be used for terrestrial wildlife migration.

The Mare Island Shoreline Heritage Preserve and Mare Island Golf Course, approximately 500-feet to the southwest of IA C2, contains open spaces with mainly non-native, ornamental grasses and forbs (herbaceous flowering plants), as well as areas vegetated with mature ornamental trees. This area is far more attractive to wildlife for foraging, breeding, and living in than the paved areas with scattered ornamental trees. It is likely that wildlife only use the IA C2 area for limited foraging opportunities. Common urban species such as rat (*Rattus* spp.), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), black-tailed jackrabbit (*Lepus californicus*), and mouse (*Peromyscus* spp.) have the potential to use IA C2 for foraging and possibly living in portions of buildings not utilized by humans. Common urban bird species such as Mourning Dove (*Zenaidura macroura*) or Brewer's Blackbird (*Euphagus cyanocephalus*) might potentially utilize an ornamental tree within IA C2 to nest in. Common urban wildlife species are accustomed to humans and human interaction and are not typically distressed by human activity; therefore, species found at IA C2 would not alter breeding or foraging habits based on human activity associated with Project activities. Within IA C2, no viable habitat for species beyond those normally found in urban habitats exists in the onshore area because the site is almost entirely covered with asphalt and buildings, is maintained landscape, or is covered with imported rock material and more attractive living and foraging options exist nearby.

The entirety of the shoreline area at IA C2 is paved, rock covered, or built-up in some manner. No riparian or marsh habitat exists along the shoreline of the Project area, and therefore wildlife species who rely on this type of habitat are not utilizing the Project area for breeding, living or foraging with exception of in a transient manner as passers-by.

Wetlands as defined under Section 404 of the Clean Water Act have not been identified in IA C2. The Project area is paved and therefore not supportive of wetland habitats. Additionally, according to the USFWS National Wetlands Inventory (NWI), there are no mapped wetlands overlapping with IA C2 and the closest wetland to the Project area is located approximately 1,500 feet to the west/southwest.

Offshore Habitats

The offshore areas at Mare Island consist of habitat below the mean high-tide line, which generally includes intertidal mudflats (located west of Mare Island), as well as open water (Mare Island Strait to east, San Pablo Bay to west, Carquinez Strait to south). The eastern portion of the IA C2 cleanup site is located adjacent to the Mare Island Strait, which is the closest surface water body to the Project area. The NWI classifies this area of the Mare Island Strait as estuarine and marine deepwater habitat. The Mare Island Strait is characterized as deepwater habitat without adjacent nearshore wetland habitat because the shoreline in the area has been reinforced with engineered structures and determined to not be a major habitat (TtEMI 2002b). The shoreline therefore, does not support wetland or marsh species in this area. The Project does not involve activities within the Mare Island Strait.

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 nine-quad search of the California Natural Diversity Database (CNDDDB) for the Sears Point, Cuttings Wharf, Cordelia, Benicia, Mare Island, Briones Valley, Richmond, San Quentin, and Petaluma Point quadrants (CDFW 2018). Species of special concern (SSC) that have potential to be present at IA C2 are discussed below.

Threatened and Endangered Species. The following flora and fauna listed as threatened or endangered by the state or federal government have been historically observed in the general vicinity or have been recorded as overlapping with IA C2.

- Federal- and state-listed raptors, such as the peregrine falcon, osprey, and Swainson's hawk, have been sighted near Mare Island. These raptors could use the Project area as foraging grounds.
- According to a search of the CNDDDB, the entirety of Mare Island is located within salt-marsh harvest mouse (*Reithrodontomys raviventris*) habitat range. The salt-marsh harvest mouse is designated as a federally endangered species. Salt-marsh harvest mice require salt marsh habitat, and in particular prefer a marsh that supports dense stands of pickleweed and adjacent to upland, salt-tolerant vegetation, so they can escape during high tides (USEPA 2010).

Other Species of Value. 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 and most other bird species are protected by the Migratory Bird Treaty Act, which includes provisions against toxic contamination.

According to the CNDDDB, some observed SSCs such as monarch butterfly (*Danaus plexippus*) are presumed to be present near IA C2, while fragrant fritillary (*Fritillaria liliacea*) and soft salty bird's-beak (*Chloropyron molle* ssp. *molle*) are presumed to no longer be present on Mare Island (local extinction).

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, all onsite project activities would be conducted on developed areas with commercial or industrial uses. The only habitat that exists within IA C2 is urban habitat, with sparse ornamental landscaping. Candidate, sensitive, or special-status species are not likely to be present in the cleanup locations and would not be impacted by project activities including personnel, equipment use, vehicles, excavation and noise. State and federally listed raptors have potential to use the Project area as a foraging ground; foraging opportunities would remain during Project activities, so a substantial adverse effect would not occur for these species. According to a search of the CNDDDB, the entirety of Mare Island is located within salt-marsh harvest mouse habitat range; no suitable habitat for this species is present at or adjacent to the project area, and therefore no impacts are anticipated. Monarch butterflies have reportedly been observed adjacent west from the Project site, no suitable habitat or foraging ground exists at IA C2 for this species.

Ecological risk assessments that included IA C2 were presented in the Final Onshore Ecological Risk Assessment, Mare Island, Vallejo, California and Offshore Areas Ecological Risk Assessment, Mare Island, Vallejo, California (TtEMI 2002a-b). The overall conclusions and recommendations of these assessments are that: (1) there are no risks to terrestrial receptors because there is no viable habitat for plants or animals within this area, and (2) potential impacts of groundwater discharge on aquatic organisms in Mare Island Strait were considered low. Because general site conditions have not changed substantially, these risk assessments are still applicable.

In addition, project controls would be implemented to avoid releases of soil/chemicals offsite into offshore habitat adjacent to the project sites during cleanup actions so that candidate, sensitive or special-status species in offshore habitats would not be impacted. For excavation activities, these controls would include BMPs for sediment and erosion control and dust mitigation as necessary. The ground surface at the excavation area planned for lead in soil in the vicinity of Building 206/208 would be restored to pre-cleanup conditions, thus preventing impact to any nearby, offshore habitat from erosion of surface soils. Therefore, the cleanup activities would not be likely to affect candidate, sensitive, or special-status species in offshore habitats.

Transport of materials removed from the Project area or imported to the area during project implementation would occur on existing roadways. There is potential for wildlife species to be struck by moving vehicles associated with the Project, however by following speed limits and vehicle drivers keeping their eyes on the roadways, the chance of this occurring is minimal. Disposal/recycling of materials removed as part of the cleanup activities would occur at existing off-site facilities that are licensed for accepting waste.

As summarized above, cleanup activities, including excavation of outdoor soils, restoration of excavated areas, transportation, and disposal/recycling of contaminated materials would not be likely to affect candidate, sensitive, or special-status species. In consideration of the above, there would be No Impact.

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:

The Project area is paved and therefore not supportive of wetland, riparian or other sensitive habitats. All onsite project activities would be conducted on developed areas with commercial or industrial uses and no riparian habitat or other sensitive natural communities are present within the project boundaries (USFWS 2014).

In addition, project controls would be implemented to avoid releases of soil/chemicals offsite into offshore habitat adjacent to the project sites during cleanup actions so that candidate, sensitive or special-status species in offshore habitats would not be impacted. For excavation activities, these controls would include BMPs for sediment and erosion control and dust mitigation as necessary. The ground surface restoration planned for lead in soil in the vicinity of Building 206/208 would be constructed to withstand erosion from stormwater, thus preventing impact to any nearby, offshore habitat. Therefore, neither removal nor backfilling and restoration treatments would be likely to affect candidate, sensitive, or special-status species in offshore habitats, and there would be No Impact.

- ☐ 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:

All onsite project activities would be conducted on developed areas with commercial and industrial uses. The closest surface water body to the cleanup sites is Mare Island Strait. Wetlands as defined under Section 404 of the Clean Water Act have not been identified in IA C2. The Project area is paved and therefore not supportive of wetland habitats. According to the NWI, there are no mapped wetlands overlapping with IA C2 and the closest wetland to the Project area is located approximately 1,500 feet to the west/southwest. Transport of materials removed from the site or imported to the site during project implementation would occur on existing roadways, and disposal/recycling would occur at existing facilities that are licensed for accepting waste (Table 2). Project controls, including BMPs for sediment and erosion control and dust mitigation, would be implemented to avoid releases of soil/chemicals offsite into the wetland habitats, located 1,500-feet away, during cleanup actions so that no wetland would be affected. Therefore, no impacts to any federally protected wetlands are anticipated or planned.

In addition, project controls would be implemented to avoid releases of soil/chemicals offsite into offshore habitat adjacent to the project sites during cleanup actions so that candidate, sensitive or special-status species in offshore habitats would not be impacted. For excavation activities, these controls would include BMPs for sediment and erosion control and dust mitigation as necessary. The surface restoration planned for lead in soil in the vicinity of Building 206/208 would be constructed to withstand erosion of underlying soil from stormwater, thus preventing impact to any nearby, offshore habitat. Therefore, neither removal nor restoration treatments would be likely to affect candidate, sensitive, or special-status species in offshore habitats, and there would be No Impact.

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:

All onsite project activities would be conducted on developed land areas with commercial and industrial uses. No fish or wildlife species are known to reside or migrate within the project boundaries. No areas within the project boundaries are known to contain any migratory wildlife corridors (TtEMI 2002a-b, CDFW BIOS 2018). Since wildlife corridors are not present at the Project area, Project activities are not anticipated to interfere substantially with the movement of wildlife. Mare Island Strait has the potential to be used as a wildlife corridor and some areas could contain habitat suitable for nursery sites. Best management practices will 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 project sites are entirely developed and covered by roadways, railroad spurs, parking areas, or buildings. As summarized below, the project activities are not in conflict with local policies or ordinances presented in the baseline conditions section that cover the Project Area:

- The City of Vallejo Tree Ordinance – Three trees will need to be removed as part of the excavation of the Building 206/208 Area. The City of Vallejo Tree Ordinance will apply to the project.
- USFWS Memorandum of Understanding regarding conservation of the salt marsh harvest mouse - proposed project activities would not conflict with the Memorandum of Understanding because there is no evidence of salt marsh harvest mouse habitat in or near IA C2 (TtEMI 2002a, CDFW 2018).
- The General plan for the City of Vallejo - Because the Project area is paved and supports only urban habitat, the Project would not conflict with the City of Vallejo policies relating to biological resources (City of Vallejo, 2018a).

No notable biological resources exist within the project sites; therefore, no aspect of the project would conflict with local policies or ordinances protecting biological resources and there would be No Impact.

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:

The project would occur within a paved, developed commercial/industrial area. The adopted conservation plan (*Salt Marsh Harvest Mouse and California Clapper Rail Recovery Plan* (USFWS 1984)) and the *Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California* (USFWS 2013) generally apply to projects occurring on Mare Island. However, project activities will not be conducted in sensitive habitats addressed under the Plan. Project activities are more than 100 feet from Mare Island Strait (a tributary to the San Francisco Bay) and are therefore not subject to San Francisco Bay Conservation and Development Commission requirements.

Solano County has a Habitat Conservation Plan (HCP) in the Draft stage of development. According to the Draft HCP, the Project area falls within the Zone 1 – Urban Zone designation (SCWA 2012). The HCP applies for projects that have threatened or endangered species and/or their habitats; since the Project area does not support such habitats, the Project is not subject to conditions in the HCP and Project activities would therefore not conflict with the HCP.

Because the project sites are not subject to the above-listed conservation plans, there would be No Impact.

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 to Cultural Resources:

Project activities that could potentially impact cultural resources include the following construction activities that could disturb soils containing cultural resources:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.

Description of Baseline Environmental Conditions:

Mare Island is a National Historic Landmark and contains several National Register Historic Districts (Navy 1994) and associated cultural resources (historical and archaeological), as defined by §15064.5. A significant portion of IA C2 is located in the Mare Island Historic District. 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 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 (SHPO), 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. As required in the Memorandum of Agreement, the City of Vallejo amended its Architectural Heritage and Historic Preservation Ordinance (Chapter 16.38 of the Vallejo Municipal Code) to include specific protections for historical resources on Mare Island as identified in the Mare Island Specific Plan (City of Vallejo 2013). The project sites discussed in this Initial Study are not located in the historical landmark district (WESTDIV and City of Vallejo 1998).

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; City of Vallejo 2013; PAR Environmental 2000). 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 midden sites indicative of Native American occupation were identified. Possible sites with artifacts predating written records that may lie below some developed portions of Mare Island were also identified (Navy 1994).

The locations of the prehistoric archaeological sites of medium and high sensitivity and historic archaeological features are shown in a figure included in the ATP (PAR Environmental 2000) (replicated in Attachment C). As seen on that figure, the two sites evaluated in this Initial Study are outside the recorded locations of the archaeological sites noted above.

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 evaluated in this Initial Study are limited to 5 localized areas and do not involve modifications to structures identified to be historically significant in the Mare Island Specific Plan (City of Vallejo 2013). 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. None of the indoor or outdoor activities would occur near designated historical resources and a certificate of appropriateness is not required for this project.

Construction activities that disturb surface and subsurface soils have the potential to encounter and/or impact historical resources. PAR Environmental currently provides archaeological expert oversight of activities on Mare Island and would be consulted if suspected archaeologically significant objects were uncovered during the cleanup actions. As noted in the Project Controls section, as part of project activities, the field crew will be notified of the potential for encountering items of archaeological interest during subsurface activities, and the appropriate procedures to follow in the event that artifacts or large deposits are encountered (i.e., immediately stop work, notify LMI of the discovery, and leave the potential artifacts in place). LMI will consult with their archaeological contractor, who will determine if the materials represent protected historical resources under Section 15064.5 and what actions are to be taken before work can resume.

Based on the above considerations, because project activities would not be conducted in or near historic structures and procedures are in place to minimize impacts on unknown buried archaeological resources, project impacts on historical resources would be Less than Significant.

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:

The proposed cleanup activities involve removal of impacted concrete, asphalt, brick, wood, and/or soil, and surface encapsulation. Given the limited scale of proposed activities that would result in subsurface disturbance, impact to archaeological resources is unlikely. Specifically, proposed cleanup activities involving disturbance of soils would occur at the Lead in Soil in the Vicinity of Building 206/208 Area site. The lead-impacted soil site near Building 206/208 is located in a developed area where the ground is comprised mainly of fill material or has been disturbed by previous activities. Given the degree of previous disturbance, impact to intact archaeological remains is also unlikely. Furthermore, little or no artifacts have been found during previous soil investigation, excavation, and soil-disturbing activities conducted near the proposed excavation area, so proposed activities are likewise not expected to encounter artifacts. However, if archaeological resources or features are identified during project activities, work in the immediate vicinity would stop, the DTSC PM would be notified, and archaeological experts at PAR Environmental would be consulted for an appropriate course of action, in accordance with PAR Archaeological Treatment Plan. At that point PAR, in consultation with DTSC and the CA SHPO, will determine whether encountered archaeological sites or contributing features are potentially significant under National Register Criteria. If so, the area will be avoided and/or impacts mitigated. Work can resume if PAR determines that encountered archaeological sites or contributing features are not significant or once appropriate treatment under California state guidelines are met.

Given the limited nature of proposed clean-up activities, as well as the previously disturbed nature of the remediation areas, cleanup activities are not likely to have an adverse effect to significant archaeological resources, and the impact would be Less than Significant.

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 at one site involves the disturbance of soils, which could affect paleontological resources, if present. However, the excavation activities would be limited to man-made fill, which by its nature would not contain undisturbed paleontological resources. Therefore, the impact would be Less than Significant.

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:

Based on the PAR Archaeological Treatment Plan, no known human burials are located in in areas of planned activities, and the presence of unrecorded interments are unlikely in these areas. In the event that human remains are encountered during the execution of the proposed project, work within a 100-foot buffer of the discovery would stop immediately, and in accordance with applicable laws and regulations outlined within the California Health and Safety Code Section 7050.5 and Public Resource Code 5097.98, field staff will contact LMI and DTSC personnel. LMI personnel will notify the County Coroner. Human remains and associated soils will be left untouched. If the Coroner determines that the remains are potentially 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 in accordance with Section 106 of the National Historic Preservation Act if human remains are noted to be Native American in origin and/or historical in nature. Therefore, the impact would be Less than Significant.

Conclusion:

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

References Used:

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6. Energy

Project Activities Likely to Create an Impact:

Project activities that could potentially impact energy consumption are construction and transportation activities that involve the use of fuel or electricity. Those activities include:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks, and transporting that material to a landfill for disposal/recycling.
- Site restoration, including import and placement of backfill of excavated areas and replacement of pavement to match pre-excavation conditions.

For the purpose of the impact evaluations, this Initial Study conservatively assumes that all the cleanup actions evaluated herein would:

- Be conducted independently and therefore occur intermittently;
- Take no more than approximately 3 to 5 months of continuous work, for each site, to complete; and,
- Be completed in 2019 (based on the current schedule).

Description of Baseline Environmental Conditions:

The sites evaluated in this Initial Study are currently associated with limited electrical usage; no operations using electricity or fuel currently occur at these sites. Building 116 is currently vacant. The area being excavated at Building 206/208 is an outdoor location.

Analysis as to whether or not project activities would:

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

Impact Analysis:

The proposed cleanup activities involve short-term construction activities and do not involve any changes in current site operations. The energy demand associated with these activities would primarily involve fuel usage by construction equipment and waste/backfill transportation vehicles. There would be a limited demand for electrical power for lighting and office trailers; these electrical needs would be supplied by generators. Several of the Project Controls presented earlier in this document would reduce unnecessary or wasteful consumption of energy resources. Those practices include:

- Minimizing idling time for all equipment, either by shutting off equipment when not in use or limiting the maximum idling time for all equipment to 5 minutes;
- Properly maintaining contractor construction equipment and tuning it in accordance with manufacturer specifications; and
- Conducting routine inspections of Project vehicles that would identify any wasteful leakage of fuel or oil.

Therefore, there would be a less than significant impact.

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?

Impact Analysis:

The Project involves remediation of a contaminated site located on private property and does not involve any long-term energy consumption. Therefore, there would be no impact.

Conclusion:

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

References Used:

ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.

7. Geology and Soils

Project Activities Likely to Create an Impact Associated with Geology and Soils:

Project activities that could potentially impact geology and soil conditions are construction activities that could alter the nature of ground surface conditions/topography or subsurface conditions, and thus could affect erosion rates or effects of geologic hazards. Those activities include:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Site restoration, including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.

Description of Baseline Environmental Conditions:

The topography of IA C2 is generally flat, with elevations of about 20 to 35 feet above mean sea level in the western portion, sloping to 4 to 10 feet above mean sea level in the eastern portion near Mare Island Strait (USGS 2018).

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 various 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. Portions of IA C2, as described below, are located on this bedrock ridge. The northern extent of the subsurface bedrock ridge is not known, but the ridge is present at least as far north as A Street (approximately ½ mile north of northernmost extent of IA C2) (CH2M HILL 2006).

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) operates a website containing soil data across the country. Using this national database (USDA 2018a), soil surveys for Solano County indicate that soils in IA C2 are predominantly classified as Made Land (Ma). The portions of IA C2 proposed for residential land use are classified as Diablo-Ayar clays; none of the cleanup areas evaluated in this Initial Study fall within this unit. Made land comprises lands that have been filled with “mixed materials” including sandstone, shale, concrete, and asphalt; soils in this mixture range from clays to sandy loam (USDA 1977). Clayey soils in this mixture would tend to be expansive in nature, and could be susceptible to appreciable volume changes

(swelling or shrinkage related to changes in water content). The fill materials are typically well-drained, but are commonly underlain by poorly-drained tidal marsh or sediments (USDA 1977). The USDA also evaluates the suitability for soils for waste management purposes; however, soils in the IA C2 area have not been evaluated with respect to this issue (USDA 2018b).

The Solano County Emergency Operation Plan includes a map showing the potential for liquefaction in areas across the county (Solano County OES 2017); the area containing IA C2 is classified on that map as having a high potential for liquefaction. A liquefaction susceptibility map available online on the Association of Bay Area Governments (ABAG) Resiliency Program website (ABAG 2018d) also indicates that liquefaction susceptibility hazard within the majority of IA C2 is very high. Based on this readily available information, the two cleanup sites would be classified as having either a high or very high liquefaction potential. A geotechnical study conducted immediately north of IA C2 within Mare Island indicated that soils in areas not previously developed by the Navy would have an increased potential for soil instability due to the low strength of the Bay Mud present in the area (AMEC Foster Wheeler 2017). Historically, landslides and mudslides have not occurred within IA C2 and no earthquake-induced or rainfall-induced landslide hazard zones have been identified within IA C2 based on ABAG Resiliency Program maps of these hazard zones (ABAG 2016a,-b,-c).

At the two cleanup sites, soils are completely covered with existing pavement and/or buildings/structures; no topsoil is exposed.

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.

Fill Material

As a result of extensive land reclamation activities at Mare Island, a highly heterogeneous surficial layer of fill material is prevalent at locations outside of the original outline of the island. The fill material consists of silty clays, sands, gravels, organic debris, debris including concrete, asphalt, brick, metal, timber, paint chips, fiberglass, and other solid refuse, and is characterized by abrupt and unpredictable changes in material in short lateral and vertical distances. Fill thickness ranges between 5 and 15 feet within IA C2 (CH2M HILL 2006).

IA C2 is located both inside and outside of the original (pre-1859) Mare Island boundary. As such, some sites discussed in this Initial Study are located within the original Mare Island boundary; the majority of the sites are located outside the original boundary within the fill material. Because much of the fill material is dredged silty clays (Bay Mud), the boundary between the fill and the silty clay in the natural deposits below often is not well defined (CH2M Hill 2006).

Unconsolidated Natural Deposits.

Unconsolidated natural deposits overlie the eroded bedrock surface on much of Mare Island. In the area east of the bedrock ridge, unconsolidated natural deposits primarily consist of silty clay and clay, with occasional discontinuous lenses of silty sand and sandy clay. Thin (up to 3 feet) intervals of peat and/or organic clay have been noted at various borings. The thickness of unconsolidated materials varies from as little as 5 feet thick near the top of the bedrock ridge to more than 105 feet. Except for the westernmost portion of IA C2 slated for residential land use which lies on the bedrock ridge, all of IA C2 is in the area east of the bedrock ridge (CH2M Hill 2006).

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 the former Mesa Road with the closest current road being Coral Sea Circle. 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 (CH2M Hill 2006).

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 active fault traces pass through IA C2; no Alquist-Priolo Fault Zones are defined within Mare Island (ABAG 2018e). The nearby active faults are summarized in Table 6-1.

TABLE 6-1: Regional Faults and Seismicity

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 ABAG Resiliency Program website includes maps illustrating shaking potential associated with specific faults (ABAG 2018f and -g), and a map depicting earthquake shaking potential is also provided in the Solano County Emergency Operation Plan (Solano County OES 2017). Based on these maps, Mare Island has a high earthquake shaking potential (strong to very strong shaking severity, or 7 to 8 Modified Mercalli Intensity).

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.

In August 2014, the South Napa Earthquake caused significant damage in the Napa Valley as well as Mare Island. The earthquake registered at a magnitude of 6.0 (USGS 2015), and damage was caused through ground shaking and surface rupture along the West Napa fault. Minor damage at Mare Island was sustained at Buildings 106, 144, and 114A, and major damage was sustained at Building 118.

Analysis as to whether or not project activities would:

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

Impact Analysis:

No Alquist-Priolo fault zones have been identified within IA C2. Therefore, there would be no project-related impacts due to rupture of a known earthquake fault.

Conclusion:

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

- ii. *Strong seismic ground shaking.*

Impact Analysis:

Nearby faults have caused severe ground shaking at Mare Island in the past and could occur in the future. If excavations were to be backfilled with materials more susceptible to seismic ground shaking than existing materials, it could result in increased potential for adverse effects to people or structures in those areas due to

seismic shaking. However, restoration activities would include backfilling excavations in a manner consistent with the *Final Soil and Groundwater Management Plan* (CH2M HILL 2001). As specified in the RAP, backfill materials would meet the applicable requirements of the Uniform Building Code and the standards and ordinances of the state and local governing authorities. Backfill material would be inert, non-expansive, free of organic matter, debris, rubble and other deleterious substances, and of such quality that it will compact thoroughly without excessive voids when watered and rolled. Because the pre-remediation subsurface soils were not deposited to these rigorous standards, these backfilling requirements should reduce the potential for effects due to seismic ground shaking. In addition, the engineering controls prescribed in the *Final Soil and Groundwater Management Plan* (CH2M HILL 2001) would reduce the potential impacts of seismic ground shaking while the excavations are open, and workers are present. Therefore, the potential Project-related impacts due to strong seismic ground shaking would be Less Than Significant.

Conclusion:

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

iii. *Seismic-related ground failure, including liquefaction.*

Impact Analysis:

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. As noted in the baseline conditions discussion, the two sites evaluated in this Initial Study are likely underlain, at least partially, by such backfill material.

If excavations were to be backfilled with materials more susceptible to seismic-related ground failure/liquefaction than existing materials, it could result in increased potential for adverse effects to people or structures in those areas due to ground failure. However, the excavation control measures proposed in the RAP and evaluated in this Initial Study would include backfill with imported materials that comply with the *Final Soil and Groundwater Management Plan* (CH2M HILL 2001). As specified in the RAP, backfill materials would meet the applicable requirements of the Uniform Building Code and the standards and ordinances of the state and local governing authorities. Backfill material would be inert, non-expansive, free of organic matter, debris, rubble and other deleterious substances, and of such quality that it will compact thoroughly without excessive voids when watered and rolled. Because the pre-remediation subsurface soils were not deposited to these rigorous standards, the backfill should be less susceptible to seismic-related ground failure. In addition, the engineering controls prescribed in the *Final Soil and Groundwater Management Plan* (CH2M HILL 2001) would reduce the potential for ground failure while the excavations are open, and workers are present. Therefore, the potential Project-related impacts due to seismic-related ground failure would be Less Than Significant.

Conclusion:

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

iv. *Landslides.*

Impact Analysis:

The project vicinity is relatively flat; there is no history of landslides and no known earthquake or rainfall-induced landslide hazard zones have been identified in IA C2 (ABAG 2018a,-b,-c). The project would not introduce long-term topographic alterations. Therefore, the project would have No Impact related to adverse effects due to landslides.

Conclusion:

- ☐ Potentially Significant Impact
- ☐ Potentially Significant Unless Mitigated

- ☐ Less Than Significant Impact
☒ No Impact

d. *Result in substantial soil erosion or the loss of topsoil.*

Impact Analysis:

None of the project sites have exposed topsoil; the sites are covered with buildings or pavement. Project-related activities proposed within existing buildings involve removal of impacted concrete, asphalt, brick, wood, sediment, and/or soil. For proposed activities indoors, soil surfaces are protected by the overlying structure and there is no exposure to weather conditions, such as rain or wind that could cause erosion or topsoil loss.

Proposed activities at the outdoor site involve disturbance and emplacement of soils, which would affect soil conditions. However, the project area is relatively flat; therefore, there would not be a significant threat of soil erosion during cleanup activities, even when localized paved surfaces are temporarily removed. As noted in the RAP, cleanup activities would employ BMPs to: 1) eliminate/reduce the movement of silt or sediment from excavation areas through the use of silt fences, sandbag berms, hay bales, and grading (including the preparation and implementation of a Storm Water Pollution Prevention Plan, as appropriate); and 2) manage soil stockpiles built during construction to prevent the movement of silt through diversion of drainage from the stockpile areas, placement of sandbags and silt fencing, and sloping of stockpiles to encourage sheet flow. Construction activities would comply with City permit requirements and other local, state, and federal air quality requirements related to the above issues. After restoration, which would include backfilling any excavations to grade and repaving the surface with asphalt, there would be no potential for soil erosion or loss of topsoil. The cap would be designed to provide for adequate drainage of stormwater and would be constructed to resist erosive weather such as wind and rain. Therefore, project-related impacts would be Less Than Significant.

Conclusion:

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

e. *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:

IA C2 has been developed, with constructed structures for several decades; no issues related to soil instability have been observed. As noted in the baseline conditions discussion, the sites included in this Initial Study are located in areas underlain by backfill materials that could be susceptible to liquefaction. However, given the relatively flat current terrain in the project sites and the fact that the site topography would be returned to original grade after remediation is complete, there would be no risk of offsite landslides associated with the project.

The excavations evaluated by this Initial Study involve soil excavation, but would be designed with sloping or shoring as necessary to protect the stability of the adjacent soils. Sidewall sloping and/or shoring would be used in excavations deeper than 4 feet bgs to minimize the risk of cave-ins. As such, the risk of creating soil instability during the proposed work is negligible. Excavations would be backfilled to the original (pre-excavation) relatively flat ground surface with clean imported fill materials in accordance with the *Final Soil and Groundwater Management Plan* (CH2M HILL 2001). As specified in the RAP, all backfill materials would meet the applicable requirements of the Uniform Building Code and the standards and ordinances of the state and local governing authorities. Backfill material would be inert, non-expansive, free of organic matter, debris, rubble, and other deleterious substances, and of such quality that it will compact thoroughly without excessive voids when watered and rolled. These requirements would result in conditions within the excavated/backfilled areas that would likely be more stable than the original conditions. As such, the proposed remedies would have No Impact on the likelihood for landslide, lateral spreading, subsidence, liquefaction, or collapse.

Conclusion:

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

f. *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:

As noted in the baseline conditions discussion, expansive soils (such as clays in fill material and the underlying Bay Mud) are likely present in IA C2. If present in the planned excavation areas, such expansive soils would be removed and replaced with engineered fill. The excavations would be backfilled to their original grade with clean imported fill materials in accordance with the *Final Soil and Groundwater Management Plan* (CH2M Hill 2001). As specified in the RAP, all backfill materials would meet the applicable requirements of the Uniform Building Code and the standards and ordinances of the state and local governing authorities. Backfill material would be inert, non-expansive, free of organic matter, debris, rubble and other deleterious substances, and of such quality that it will compact thoroughly without excessive voids when watered and rolled. These requirements would result in conditions within the excavated/backfilled areas that would be less likely to exhibit shrinking and swelling than the original conditions. Therefore, project-related impacts associated with expansive soils would be Less Than Significant.

Conclusion:

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

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

Impact Analysis:

As noted in the baseline conditions discussion, it is unknown whether soils at the project sites would be capable of supporting the use of septic tanks or other wastewater disposal systems. No septic tanks or other underground wastewater disposal systems are to be constructed or modified as part of the project activities. Sewers are available for disposal of water in the vicinity of the project area and aboveground storage tanks would be used for temporary storage of extracted groundwater, if groundwater extraction is necessary, pending appropriate disposal.

As specified in the RAP, all backfill materials placed in cleanup areas at IA C2 would meet the applicable requirements of the Uniform Building Code and the standards and ordinances of the state and local governing authorities. Backfill material would be inert, non-expansive, free of organic matter, debris, rubble, and other deleterious substances, and of such quality that it will compact thoroughly without excessive voids when watered and rolled. Because the pre-remediation subsurface soils were not deposited to these rigorous standards and are highly heterogeneous, if anything, the backfill should be more capable of supporting the use of septic tanks or other wastewater disposal systems than under current soil conditions. Therefore, the project would have No Impact related to the use of site soils for septic tanks or other wastewater systems.

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 on Greenhouse Gas Emissions:

Project activities that could potentially impact greenhouse gas emissions are construction activities involving the use of hydrocarbon-fueled remediation equipment or transport vehicles, and passenger vehicles transporting remediation workers to the site. These remediation activities include:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to appropriate facility based on waste characterization and importation of clean soil.
- Site restoration, including backfill of all excavated areas with imported clean soil and replacement of pavement to match pre-excavation conditions.

The major category of greenhouse gas (GHG) emissions resulting from human activities is carbon dioxide (CO₂) from fossil fuel combustion. There are several other gases that contribute to global warming, including methane, nitrous oxide, sulfur hexafluoride, perfluorocarbons, and hydrofluorocarbons. However, the majority of greenhouse gas emissions associated with the project would be CO₂ from diesel fueled heavy equipment and trucks; therefore, this discussion in this section focuses on CO₂.

Description of Baseline Environmental Conditions:

GHGs are pollutants with impacts causing global concern unlike criteria air pollutants or toxic air contaminants that are pollutants of regional and/or local concern. GHGs contribute to climate change by allowing ultraviolet radiation to enter the atmosphere and warm the Earth's surface, but they also prevent some infrared radiation from the Earth from escaping back into space. The largest anthropogenic source of GHGs is the combustion of fossil fuels, which results primarily in emissions of CO₂. Mitigating or reducing GHG emissions is critical to slowing climate change. In 2013, the most recent year for which data are available, GHG emissions in the State of California were about 459,300,000 metric tons of CO₂e¹ (CARB 2018). The transportation sector is the largest contributor, producing 37 percent of the state's total emissions in 2004. Industrial sources are the second largest contributor (CARB 2018).

Analysis as to whether or not project activities would:

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

Impact Analysis:

During construction, the Project would contribute GHG emissions through direct CO₂ emissions from vehicles and heavy equipment. Calculations of CO₂ emission estimates for the Project can be found in Attachment B and are summarized in Table 7-1.

Table 7-1. Greenhouse Gas Emissions for Heavy Construction Equipment Use and Haul Truck Travel

Pollutant	Average Annual Construction Emissions	BAAQMD CEQA Threshold
CO ₂ (metric tons/yr)	245	1,100

Note: Emissions calculated using the CalEEMod emissions estimation model.

Based on the CalEEMod modeling discussed in the Air Quality section, total annual CO₂ emissions for the Project's construction phase are estimated to be 245 metric tons. BAAQMD has not established Thresholds of Significance for construction-related GHG emissions that would apply to this project. Nevertheless, BAAQMD's 2017 CEQA Guidelines (at section 8.2) prescribes that the Lead Agency should still "make a determination on

¹ The term CO₂e is used to represent all greenhouse gas emissions, expressed as the impact of each different greenhouse gas in terms of the amount of CO₂ that would create the same amount of warming.

the significance of these construction-generated GHG emission impacts” even though BAAQMD does not identify a standard to use for that determination.

In lieu of construction-related Thresholds of Significance, the operational-related maximum annual Threshold of Significance for land use projects is used as a point of comparison (1,100 metric tons). The project's calculated annual CO₂ emissions are well below this threshold. Annual CO₂ emissions would be further reduced with implementation of the BMPs described in the Air Quality section. The project would not create a new permanent stationary or non-stationary source of emission, including GHG emissions as defined by BAAQMD guidelines. Therefore, project impacts related to GHG emissions would be Less than Significant.

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:

As noted in the Project Control section, construction activities would comply with the measures specified in the City of Vallejo Climate Action Plan (2012) construction equipment reduction strategy, Chapter 4, Measure OR-2, which includes minimizing idling times, proper maintenance of construction equipment, and preferential use of electric or alternate fueled equipment over gasoline/diesel-powered equipment. All project activities would be performed consistent with BAAQMD rules and policies, and the Project's BMPs include these measures, in addition to other measures that would reduce GHG emissions.

As discussed in the discussion for Item a., project-related emissions would be below significance thresholds. As such, this project would not conflict with the local greenhouse gas reduction plan, and there would be a Less than Significant Impact.

Conclusion:

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

References Used:

BAAQMD. 2017a. California Environmental Quality Act Air Quality Guidelines. Updated May.

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9. Hazards and Hazardous Materials

Project Activities Likely to Create an Impact Associated with Hazards and Hazardous Materials:

Project activities that could potentially create a significant hazard to the public or environment are construction activities, during which the presence and operation of heavy equipment could pose hazards or interfere with emergency response activities, or hazardous materials could be exposed or released. Such activities include:

- Excavation and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.

- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to an appropriate facility based on waste characterization and importation of clean soil.
- Site restoration, including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.

Description of Baseline Environmental Conditions:

The materials currently present in the project sites that would be the subject of removal actions are soil, concrete, asphalt, brick, sediment, and/or wood. Chemical constituents within these materials may include polychlorinated biphenyls (PCBs), petroleum hydrocarbons, metals, abrasive blast material (ABM), black granular material (BGM), and/or pesticides. Some of these chemicals are also present as residues on impervious surfaces at some of the project sites.

Hazardous wastes are being generated and transported from various areas within IA C2 as part of the environmental cleanup of Mare Island; waste handling procedures have been developed and are implemented to minimize potential hazards to the public or environment. Current operations of commercial/industrial facilities in IA C2 may also use hazardous materials and generate hazardous waste. Waste disposal, if required, is performed by licensed haulers and disposed or recycled at properly licensed facilities. Other than the potentially hazardous materials associated with the cleanup sites, natural hazardous conditions are associated with the presence of wildlands and naturally-occurring asbestos (NOA).

Wildlands pose a hazard because they are susceptible to wildfire. Maps identifying areas posing threat of wildland fires have been prepared by state and local agencies (Solano County OES 2017, Cal Fire 2008). Based on review of those maps, the area containing IA C2 would primarily be considered "Urban Unzoned" and/or "Non-Wildland/Non-Urban"; however, areas along the perimeter of IA C2 have a moderate or high threat of wildland fire. Wildlands are located approximately 0.50 mile southeast of the proposed Project boundary at the Mare Island Shoreline Heritage Preserve. Other vegetated areas in the vicinity include Mare Island Memorial Park, located adjacent to the proposed property to the northwest and Mare Island Golf Club, located approximately 0.25 mile southwest of the proposed Project Area.

NOA is associated with ultramafic, metamorphic rocks. As discussed above in the Geology & Soils section, the bedrock in the project vicinity is sedimentary - arkosic sandstone, siltstone, and micaceous shale; these types of rock do not contain NOA. Consistent with this conclusion, no rocks likely to contain 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).

The City of Vallejo has prepared an Emergency Operations Plan to establish a framework for managing and coordinating emergency operations in the City (City of Vallejo 2015). This Plan outlines the procedures that would be followed in the event of an emergency to save lives and reduce injuries, prevent/minimize property damage, and protect the environment.

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 not affect current operations of commercial/industrial facilities in IA C2, which may use hazardous materials and generate hazardous waste.

The project would involve the excavation/removal, stockpiling, and offsite disposal/recycling of soil, concrete, asphalt, brick, sediment, plastic sheeting, and/or wood containing PCBs, petroleum hydrocarbons, metals, ABM, BGM, and/or pesticides. The project would also involve the removal of residues on impervious surfaces that contain PCBs and/or petroleum hydrocarbons. These activities would occur over a period of limited duration (3 to 5 months).

At concentrations in excess of regulatory criteria, materials removed as part of cleanup activities would constitute hazardous waste. Removed materials and any construction-related waste, including wastewater generated during cleanup activities, 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 hazardous waste as described below. Applicable site controls would be implemented to protect worker health during these activities in accordance with a site-specific HASP. During cleanup activities onsite, protection of workers (the individuals in most direct contact with the potential hazardous waste) also provides protection to the general public, who would be excluded from the work areas

and would therefore not come into direct contact with these materials. Site controls would also be consistent with BMPs, hazardous waste regulations, and other applicable regulations and permits.

Excavated/removed materials would be transported by truck to an appropriately licensed landfill for treatment (if required) and disposal/recycling (Table 2 in the Project Description). If hazardous materials were to be released from these trucks during transport in the form of dust or spillage, the public or ecological receptors could be exposed to those materials, or contamination could spread to a broader area. As noted in the RAP, all truckloads of excavated/removed materials would be covered. In addition, those trucks would follow a designated route 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 disposal or treatment requirements. In this way, the waste would be transported directly to an appropriate disposal/recycling facility that is licensed to accept the waste, thus minimizing the amount of time the waste is in transit. Furthermore, by using a properly licensed facility designed for the waste in question, the potential for releases from that facility would be minimized. 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 pesticide-contaminated soil. As also specified in the RAP, excavated/removed materials would be covered while being stockpiled to reduce the potential for migration of hazardous materials from the stockpile area (either in air, surface water, or surface soils/pavement), and air monitoring would be performed (if necessary) to detect possible offsite impacts (ERM 2019).

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 (DOT) and USEPA under the Resource Conservation and Recovery Act. Haulers are also subject to California hazardous waste law requirements pertaining to hauling of hazardous wastes (Health and Safety Code §25100 et seq. and §25163 et seq.; 22 CCR §66263.10 et seq.; 13 CCR §1160 et seq.; California Vehicle Code §12804 et seq. and §31300 et seq.), which are implemented and enforced by DTSC, as well as the California Highway Patrol, Department of Motor Vehicles, local sheriff, and police agencies who have general responsibilities for the transportation of hazardous waste on state and local roadways. As specified in the RAP, truck exteriors/tires will be cleaned as needed to avoid soil tracking off the site onto public roadways. Truck inspections will be conducted to confirm: 1) that the vehicle is in safe operating condition; and 2) the material being transported is secured and will not be released from the vehicle during transport.

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

Project-related transport of hazardous waste would occur during a short time period (3 to 5 months). Furthermore, as noted above, the management of potentially contaminated waste and adherence to site controls and plans, and regulatory requirements related to transport of hazardous waste reduce the potential for significant hazard to the public or the environment to result from the project. Therefore, the potential hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials would be Less Than Significant.

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 activity hazard analysis developed for the project to minimize the potential for accidental releases of hazardous materials during cleanup activities. The HASP would provide an Emergency Contingency Plan. With the correct implementation of the Emergency Contingency Plan, in the event that a hazardous release occurs, potential impacts to the public or environment should be minimized. All trucks would be registered hazardous waste haulers licensed by the State of California and trained to deal with emergencies. The potential for releases during transport would also be reduced by the performance of truck inspections, which would be conducted to confirm: 1) that the

vehicle is in safe operating condition; and 2) the material being transported is secured and will not be released from the vehicle during transport.

Potential upset conditions that could occur during cleanup activities and could involve the release of hazardous materials (fuel or excavated/removed materials from the site) include fire, fuel spills, hydraulic fluid leaks, and accidents and incidents commonly associated with construction-related activities. The hazards due to these conditions or situations would be managed through:

- Proper maintenance and operation of the machinery and vehicles, to reduce the potential for fuel releases, or malfunctions that could result in spillage of hazardous materials excavated/removed from the site;
- Proper storage of fuels with secondary containment as appropriate, to reduce the potential for releases;
- Calling 811 prior to ground disturbance activities as required by law, and marking of underground utilities to avoid unexpected encounters with utilities that could release contaminants such as oil pipelines and sewer lines; and
- Enforcement of safe work practices and other safety provisions as specified in the HASP.

Therefore, by employing the practices noted above and by following local, state and federal requirements related to hazardous waste management, the potential hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be Less Than Significant.

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 (students under 18 years of age) to the cleanup activities evaluated in the Initial Study is an elementary school (Mare Island Health & Fitness Academy) located at 400 Rickover Street; the school's location is labeled with a "SCHOOL" designation along the western margin of Figure 1. This school is located approximately 1,000 feet away (within one-quarter mile) from Building 116, within which cleanup activities would be conducted. The other cleanup area is located more than one-quarter mile from the school.

The cleanup at Building 116 would involve the excavation/removal, stockpiling, and offsite disposal of concrete, asphalt, sediment, and/or wood containing PCBs and/or petroleum hydrocarbons. At concentrations in excess of regulatory criteria, materials removed as part of cleanup activities would constitute hazardous waste. Because the cleanup activities would occur inside Building 116, workers and students at the nearby school would not come into direct contact with these materials. Furthermore, hazardous emissions associated with cleanup activities (such as airborne dust containing contaminants) would be contained within the building.

Excavated/removed materials associated with both sites with physical removal activities would be transported by truck to an appropriately licensed landfill for treatment (if required) and disposal/recycling. Those trucks would follow a designated route using Railroad Avenue to limit impacts to residents and businesses; this route passes within one-quarter mile of the school. If hazardous materials were to be released from these trucks during transport in the form of dust or spillage, the public could be exposed to those materials. To reduce this potential, all trucks would be covered, and truck exteriors/tires will be cleaned as needed to avoid soil tracking off the site onto public roadways. Truck inspections will be conducted to confirm: 1) that the vehicle is in safe operating condition; and 2) the material being transported is secured and will not be released from the vehicle during transport. Excavated/removed materials would be covered while being stockpiled to reduce the potential for migration of hazardous materials from the stockpile area (either in air, surface water, or surface soils/pavement), and air monitoring would be performed (if necessary) to detect possible offsite impacts (ERM 2019).

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

In summary, cleanup activities associated with the Project that would occur within one-quarter mile of the school are unlikely to emit hazardous emissions or to result in releases of hazardous materials that would affect workers or students at the school for the following reasons:

- The single cleanup site within one-quarter mile of the school is an indoor site; and
- Regulatory requirements related to transport of hazardous waste and best practices (covering the load) reduce the potential for releases during transport.

Therefore, the potential for the Project to result in impacts related to hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school would be Less Than Significant.

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 the public or the environment.*

Impact Analysis:

The proposed project is identified as an active site on the above-referenced list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List). In the long term, the proposed cleanup activities would reduce hazards by removing contaminated material from the site. In the short-term, during cleanup activities, the potential for related hazards would increase because impacted materials are being disturbed. The management of potentially contaminated waste generated during cleanup activities, and adherence to site controls/plans and regulatory requirements related to transport of hazardous waste reduce the potential for significant hazard to the public or the environment to result from the project. Therefore, the potential hazard to the public or the environment throughout the excavation/removal and transport of hazardous materials would be Less Than Significant.

Conclusion:

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

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

Impact Analysis:

The proposed Project is not located within two miles of a public airport or public use airport, and the Project is not located within an airport land use plan. Therefore, there would be No Impact.

Conclusion:

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

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

Impact Analysis:

There are no private airstrips in the vicinity of the proposed Project. There would be No Impact.

Conclusion:

- ☐ Potentially Significant Impact

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

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

Impact Analysis:

Emergency actions in the vicinity of the cleanup sites would be managed by the City of Vallejo in accordance with the Emergency Operations Plan prepared to establish a framework for managing and coordinating emergency operations in the City (City of Vallejo 2015). That Plan focuses on the emergency response process, and does not specify emergency evacuation routes. None of the cleanup sites are located in a major roadway. The lead soil excavation near Buildings 206/208 will temporarily affect vehicular traffic along Bagley Street during excavation and backfill activities; however, several alternate routes are available to access destinations on or near that street. The excavation areas would be restored to pre-remediation conditions after cleanup activities are completed. In addition, the amount of vehicular traffic that would be added to the main roadways in the project vicinity at any given time would be relatively minor. Multiple evacuation routes leading off Mare Island are available (i.e., Nimitz Avenue, Railroad Avenue, and Azuar Drive).

Based on the above considerations, Project activities would not affect: 1) the ability of emergency response personnel to access areas in the vicinity of the cleanup sites, or 2) the accessibility of evacuation routes. Therefore, Project activities would have No Impact on the implementation of emergency response procedures or emergency evacuation measures.

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 wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Impact Analysis:

As noted in the baseline conditions discussion above, the potential for wildland fires exists in areas near the cleanup sites. Upset conditions such as fires from fuel spills, hydraulic fluid leaks, and other construction related activities would have the potential to occur and may extend to wildland areas in the vicinity of the proposed Project Area. However, proposed Project activities would be conducted in accordance with the site-specific HASP and activity hazard analysis developed for the project, which would also include an Emergency Contingency Plan. Successful implementation of the Emergency Contingency Plan would minimize potential impacts related to fires. Further, the potential for fire hazards would be reduced through proper maintenance and operation of the machinery and vehicles, proper storage of fuels, and enforcement of safe work practices and other safety provisions as specified in the HASP. As such, project-related impacts from wildland fires would be Less Than Significant.

Conclusion:

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

i. Result in human exposure to Naturally Occurring Asbestos?

Impact Analysis:

No rocks likely to contain NOA are present in the project area. The soil at the project sites is fill material (see Section 6.0 Geology and Soils), and soils/rocks that may contain NOA have not been observed. For these reasons, exposure of site workers or the surrounding community to NOA is not considered to be a potential hazard, and the project would have No Impact related to human exposure to NOA.

Conclusion:

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

References Used:

- ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.
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- California Air Resources Board (CARB). 2000. “*General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*,” Open File Report 2000-19.
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- 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.

10. Hydrology and Water Quality

Project Activities Likely to Create an Impact on Hydrology or Water Quality:

Project activities that could potentially impact hydrology or water quality are construction activities that could result in releases of contaminated materials, introduce silt into surface waters, or alter ground surface topography such that surface water flow would be redirected. These activities include:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to an appropriate facility based on waste characterization and importation of clean soil.
- Site restoration, including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.

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 IA C2 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. With seasonal variability in salinity, flow, and sediment deposition, the aquatic environment is highly dynamic (ERM 2019).

IA C2 is covered almost entirely by buildings and paved surfaces; therefore, surface water drainage within IA C2 is controlled primarily by an existing stormwater system (CH2M HILL 2006). Most rainwater runoff flows locally to stormwater drains that discharge to Mare Island Strait. However, precipitation also creates ponding, evaporates, or seeps underground through the asphalt. No natural or man-made surface water bodies (lakes, creeks, streams, or rivers) are present within IA C2. IA C2 is immediately adjacent to the open water of Mare Island Strait.

Agencies with primary regulatory jurisdiction over water quality and/or waste discharge requirements include the California State Water Resources Control Board (SWRCB)/San Francisco Bay Regional Water Quality Control Board (Regional Water Board), DTSC, United States Environmental Protection Agency (USEPA), California Department of Public Health (CDPH), and Vallejo Flood and Wastewater District (VFWD). A comprehensive list of

the applicable water quality standards and waste discharge requirements and the associated agencies that govern them are provided in Tables 5.2-1 through 5.2-4 in the *Draft IA C2 Remedial Action Plan for Public Review* (ERM 2019), and provided below:

- Clean Water Act California Toxics Rule, 40 CFR Section 131.38.
- Clean Water Act Water Quality Criteria, 33 USC Section 1314 Quality Criteria for Water, 1986 EPA 44/5-86-001, May 1.
- Regional Water Board, Water Quality Control Plan for the San Francisco Bay Basin, Water quality objectives.
- Clean Water Act (NPDES Industrial Storm Water Permit Program), 40 CFR 122.26.
- Clean Water Act (NPDES Construction Storm Water Permit Program), 40 CFR 122.26.
- SWRCB and Regional Water Board, California Porter Cologne Water Quality Act (Design, construction, monitoring, and closure requirements for classified waste management units), Calif. Water Code Section 13020 et seq. Title 23, CCR, Division 3, Chapter 15, (Section 2510 et seq.).
- SWRCB and Regional Water Board, California Porter Cologne Water Quality Act (State Water Resources Control Board “Anti-degradation Policy”), Resolution No. 68-16.
- SWRCB and Regional Water Board, California Porter Cologne Water Quality Act (State Water Resources Control Board Policy on Investigation and Remediation of Contaminated Sites), Resolution No. 92-49.
- Regional Water Board, California Porter Cologne Water Quality Act (San Francisco Bay Regional Water Quality Control Board Basin Plan), Water Quality Control Plan for the San Francisco Bay Basin (2013 update).
- SWRCB and Regional Water Board, General Permit for Storm Water Discharges from Construction Activities, 40 CFR Parts 122, 123, 124, NPDES, implemented by SWRCB Order No. 99-08 DWQ.
- SWRCB and Regional Water Board, General Permit for Stormwater Discharges from Industrial Activities, 40 CFR Parts 122, 123, 124, NPDES, implemented by SWRCB Order No. 97-03 DWQ.
- DTSC, California Hazardous Waste Control Law (Criteria for identification of hazardous and extremely hazardous waste), 22 CCR Division 4.5, Chapter 11.
- DTSC, California Hazardous Waste Control Law (Air emission standards for process vents), 22 CCR Division 4.5, Chapter 15, Article 27.
- DTSC, California Hazardous Waste Control Law (Air emission standards for equipment leaks), 22 CCR Division 4.5, Chapter 15, Article 28.
- DTSC, California Hazardous Waste Control Law (Land disposal restrictions), 22 CCR Division 4.5, Chapter 18.
- DTSC, California Health and Safety Code – Institutional Controls, H&SC Division 20, Chapter 6.5, Article 11.1 Institutional Control.
- CDFG, California Fish and Game Code (Discharge of Pollutants to Waters of the State), Calif. Fish and Game Code Section 5650.
- OES CUPA, California Health and Safety Code (Hazardous Materials Release Response Plans and Inventory), H&SC Division 20, Chapter 6.95 19 (CCR Division 2, Chapter 4, Article 4).
- BAAQMD, Stockpiling and aeration of contaminated soil, Air Quality Management District Regulation VIII, Rule 40.

Maps depicting flood zones in the vicinity of Mare Island are provided in the Solano County Emergency Operation Plan (Solano County OES 2017) and on the ABAG Resiliency Program website (ABAG 2018h). These maps classify the area containing IA C2 as being outside the 100- and 500-year flood zones. No dams or levees are present within IA C2 or on Mare Island (Department of Water Resources 2018, Solano County OES 2017, California Resources Agency 2018); the closest dams are located across the Strait from IA C2. Given its proximity to San Pablo Bay, there is a possibility of flooding on Mare Island due to tsunamis (tidal waves) coming through the Golden Gate. However, as illustrated on a map generated for the ABAG Resiliency Program (ABAG 2018i) the greatest risk for flooding associated with tsunamis would occur on the seaward (western) portion of the island. On the eastern side of the island adjacent to the Strait, where IA C2 is located, potential flood areas related to tsunamis are limited to the areas immediately adjacent to the Strait. Seiches (large standing waves) occur in large inland

bodies of water and can be triggered by meteorological disturbances, seismic activity, or tsunamis. Because there are no water bodies within IA C2, seiches are not likely in this area. As discussed in the Geology & Soils section, portions of Mare Island are also subject to rainfall-induced landslides (mudflows). Given the relatively flat topography in IA C2, mudflows are not likely hazards in that area, as shown on the map generated for the ABAG Resiliency Program (ABAG 2018b).

Groundwater in IA C2 is present between approximately 2 and 16 feet bgs within heterogeneous, generally low hydraulic conductivity materials consisting of fill (sand, gravel, debris, and dredge material) and Bay Mud (natural unconsolidated deposits consisting of mainly silt and clay) (CH2M HILL 2006). Groundwater flow in IA C2 is influenced locally by variations in lithology. Some sands and gravels are interspersed within the silts and clays of the fill and dredge spoils with little lateral continuity. Typically, groundwater preferentially flows within coarse-grained materials (sands and gravels), rather than within fine-grained materials (clays and silts). Because the sands and gravels are not laterally continuous within the fill, they do not represent a continuous preferential groundwater pathway. However, backfill in utility corridors is often coarse-grained and may provide relatively continuous preferential pathways in the shallow subsurface. As a result of the mixed lithologies, groundwater flow is not uniform; flow direction and rate vary locally in response to the hydraulic properties of the heterogeneous fill (CH2M HILL 2006).

Tidal fluctuations in Mare Island Strait have a substantial influence on groundwater levels in some areas very near the Strait, but have minimal influence on groundwater flow rate and direction in areas of IA C2 set back from the Strait. For example, during a 5-day period in 1995, wells within approximately 30 feet from the Strait exhibited tidal fluctuations of greater than 5 feet, while the Strait exhibited fluctuations of 6.9 feet (PRC 1996a). Water levels at locations away from the Strait (greater than 50 feet from the Strait) usually show quite limited tidal effects (less than 1 foot of tidal response). With the exception of the easternmost portions of IA C2 near Berths 17 and 18, land within IA C2 is more than 50 feet from the Strait; therefore, groundwater levels across most of IA C2 are not expected to be affected by tidal variations.

Groundwater levels in most wells vary seasonally, with highest levels occurring during the wet season (November to April) and lowest levels during the dry season (May to October) (ERM 2019).

Groundwater at IA C2 is not known to have ever been used for domestic, agricultural, or industrial water supply. The technical memorandum *Assessment of the MUN Beneficial Use Designation for the Eastern Early Transfer Parcel, Mare Island, Vallejo, California* (CH2M HILL 2003a) evaluates the potential for groundwater beneath the Eastern Early Transfer Parcel at Mare Island to be used for municipal and domestic water supply. Similarly, the technical memorandum *Assessment of Beneficial Uses of Groundwater* (PRC 1997) evaluates the potential beneficial uses of Mare Island groundwater of industrial service supply, industrial process supply, agricultural supply, and freshwater replenishment to surface waters. The conclusions of these technical memoranda indicate that groundwater does not meet the criteria for existing or potential beneficial use for drinking water, industrial service supply, industrial process supply, agricultural supply, or freshwater replenishment to surface waters.

In 2003, the Regional Water Board indicated that while it agreed that groundwater in IA C2 met the exception criteria from consideration as potential sources of drinking water, they did not agree that shallow groundwater did not have other beneficial uses such as industrial service supply, process supply, agricultural supply or freshwater replenishment (Regional Water Board 2003). In 2008, the Water Board concurred that the shallow groundwater in IA C2 meets the exception for municipal and domestic use (CH2M Hill 2006, Regional Water Board 2008). In 2016, the Water Board reconfirmed that shallow groundwater in IA C2 meets the exception for municipal and domestic use, but could potentially be used for other purposes (Regional Water Board 2016).

Analysis as to whether or not project activities would:

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

Impact Analysis:

There are no water bodies within IA C2. The nearest surface water body is Mare Island Strait, which is more than 600 feet from the closest project site. BMPs would be applied during the removal actions, backfill, and asphalt installation to confirm that applicable water quality standards (as described in the section above) and waste discharge requirements are not violated. BMPs include:

- Use of silt fences, sandbag berms, hay bales, and grading to eliminate/reduce the movement of silt or sediment from the excavation/installation area into stormwater runoff.
- Management of soil stockpiles built during cleanup work in accordance with the *Final Soil and Groundwater Management Plan, Lennar Mare Island, Vallejo, California* (CH2M HILL 2001) to prevent the movement of

silt into stormwater runoff through: diversion of drainage from the stockpile areas; placement of sandbags and silt fencing; and sloping of stockpiles to encourage sheet flow.

- Management of solid wastes (such as wood, sediment, concrete, asphalt, and brick) from construction activities in accordance with the *Final Soil and Groundwater Management Plan, Lennar Mare Island, Vallejo, California* (CH2M HILL 2001) to prevent contamination of stormwater runoff, and the use of dumpsters to contain solid waste.
- Use of spill control measures and standard procedures for hazardous materials storage and vehicle fueling to manage hazardous wastes and materials to prevent spills and decrease the potential for offsite discharge via stormwater.

These and other BMPs, as necessary, would be implemented and inspected regularly to maintain stormwater quality at the site. If new hazards are introduced to the site, the BMPs would be reviewed and updated; therefore, it is anticipated that no water quality standards or waste discharge requirements would be violated (CH2M HILL 2001; ERM 2019). Furthermore, other than the application of clean water as dust suppression during active remediation, for which there should be limited to no runoff, no other surface water discharges are anticipated. As such, project impacts related to water quality standards or waste discharge requirements would be Less Than Significant.

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:

Remediation activities involve removal of impacted solid media from inside buildings and shallow soil intervals. The only activity associated with remediation activities that could result in extraction of groundwater would be excavation dewatering, if needed. The excavations would be performed during the dry season when substantial amounts of rain would not fall into the open excavations. The excavations would be terminated at or before encountering the water table. For these reasons, dewatering is not anticipated during excavation activities. The project sites are currently covered with buildings or paved, which does not allow for significant recharge from rainfall; after completion of cleanup activities these areas would be restored with similar materials. Therefore, the project would have no effect on the amount of recharge to the project sites through percolation of surface water. For these reasons, the project would not create a net deficit in aquifer volume or cause the water table to drop, and the impact would be Less Than Significant.

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. Surface drainage within IA C2 consists of rainfall or other surface water runoff, which is directed to the storm sewers. Cleanup at the interior site has no potential to affect local drainage patterns of surface water in the area. Proposed excavation activities at the outdoor site could affect local site topography/drainage patterns while the excavation remains open. However, the excavation area would remain open for a relatively short term, and excavation activities are planned for a time of the year when rainfall is unlikely. Furthermore, following excavation activities, site restoration would be completed and the site would be returned to pre-existing grade; therefore, the existing drainage pattern in the area (surface runoff to the storm water system) would not be significantly altered. BMPs would be employed during cleanup activities to reduce the potential for migration of sediments from the work area. In addition, because the

excavation areas would be paved following completion of cleanup activities, post-cleanup conditions would not result in substantial erosion or siltation. In consideration of the above, project-related impacts to erosion or siltation due to altered site drainage patterns would be Less Than Significant.

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:

There are no streams or rivers on Mare Island, and the cleanup sites are located away from Mare Island Strait. Surface drainage within IA C2 consists of rainfall or other surface water runoff, which is directed to the storm sewers. Cleanup at the interior site has no potential to affect local drainage patterns of surface water in the area. Proposed excavation activities at the outdoor site could affect local site topography/drainage patterns while the excavation remains open. However, the excavation area would remain open for a relatively short term. BMPs installed to prevent siltation migration to sewers and waterways could affect surface drainage patterns, but these BMPs would be removed after completion of cleanup activities. Cleanup activities are planned for a time of the year when rainfall is unlikely; thus, flooding due to project activities is also unlikely. Furthermore, following excavation activities, site restoration would be completed, and the site would be returned to existing grade and no new structures would be installed as part of the project. Therefore, the existing drainage pattern in the area (surface runoff to the storm water system) would not be altered. In summary, the project would not alter the course of a stream or river or increase the amount of surface runoff, and the project would have No Impact related to flooding due to altered site drainage patterns.

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:

A limited amount of runoff water could be generated during project activities as part of equipment or vehicle rinsing/washing, or applying water for dust suppression (estimated at less than 1,000 gallons per day). Nevertheless, as described above, BMPs would be employed to reduce or eliminate the amount of runoff associated with these activities. As is standard practice, to the extent practical, rinse water would be captured using standard BMPs and containerized. Dust suppression would be controlled such that the targeted soils would be moistened, but not soaked, with water applied for that purpose; the majority of this volume would soak into and remain in the soil. As noted above, dewatering is not anticipated during remediation activities; however, if it did occur, an accidental release of this groundwater could contribute runoff water.

As noted above, and in the RAP, cleanup activities would employ BMPs to: 1) eliminate/reduce the movement of silt or sediment from excavation areas through the use of silt fences, sandbag berms, hay bales, and grading (including the preparation and implementation of a Storm Water Pollution Prevention Plan, as appropriate); and 2) manage soil stockpiles created during construction to prevent the movement of silt through diversion of drainage from the stockpile areas, placement of sandbags and silt fencing, and sloping of stockpiles to encourage sheet flow. Construction activities would comply with City of Vallejo permit requirements and other local, state, and federal air quality requirements related to the above issues.

The containerized rinse water would be sampled as required by applicable local laws. This waste water would then be disposed of offsite, or in select circumstances, discharged under permit to the Vallejo Sanitation & Flood Control District (now referred to as the Vallejo Flood & Wastewater District) sewer system. The anticipated volume of waste water to be generated would be significantly less than the 1,000 gallons per site per day expected to be used for dust suppression.

The volume of runoff expected from remediation activities would be limited as noted above, and remediation activities would occur during the dry season, when no rainfall would be flowing into the storm sewers. If a backup in the sewer system were observed, remediation staff would not discharge to avoid overflow. The limited runoff from cleanup actions at the sites would likely be disposed of offsite. However, if the runoff were to be discharged to the storm sewer system, it would be performed in dry conditions and would therefore not exceed the capacity of the storm sewers in the vicinity of the project sites, which are designed for storm conditions. The exterior site area contains 8-inch and 48-inch diameter reinforced concrete pipes beneath Bagley Street. Waste water that is disposed of offsite would be transported to a disposal facility that: 1) is licensed to accept the waste; and 2) could accommodate the volume of waste water generated.

In summary, the following reduce the potential project-related impacts: 1) the use of water during remediation activities would be limited; 2) standard practices would be employed to reduce generation of runoff; 3) BMPs would be put in place to reduce the volume of runoff and the potential for migration of impacted sediments into runoff; and 4) remediation activities would occur within the dry season, when there is a higher capacity of the storm sewers. Therefore, the containerized runoff is likely to be disposed of offsite, but if necessary would be discharged to the storm sewer, the volume of water generated would not exceed the capacity of the storm water drainage system. Additionally, the project would not provide substantial additional sources of polluted runoff. Therefore, the project-related impacts would be Less Than Significant.

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 and sediment, the removal of which would ultimately improve water quality. Excavation and contaminated media removal activities are not expected to substantially degrade surface or groundwater quality because BMPs would be employed to reduce the volume of runoff and the potential for impacted sediments to migrate into surface water, and waste handling procedures would be conducted in accordance with local, state, and federal regulations developed for protection of the environment, including water quality. Therefore, the project-related impacts would be Less Than Significant.

Conclusion:

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

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

Impact Analysis:

IA C2 is not located within a 100-year flood hazard area. The proposed Project does not include the construction of housing. Therefore, there would be No Impact.

Conclusion:

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

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

Impact Analysis:

IA C2 is not located within a 100-year flood hazard area. The proposed Project does not include the construction of any aboveground structures. Heavy equipment, such as a paver, excavator, drill rig, backhoe, bulldozer, jack hammer, or grader, would be at the site during project implementation, but only temporarily; this equipment would not significantly impede or redirect flood flows. Therefore, there would be No Impact.

Conclusion:

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

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

Impact Analysis:

IA C2 is not located within a 100-year flood hazard area. No levees or dams are present on Mare Island, and the project does not include construction of levees or dams. The closest dams are located across the Strait from IA C2, and floodwaters associated with failure of one or more of those dams would flow across the adjacent land and empty into the downgradient water bodies (Mare Island Strait, Carquinez Strait, or Suisun Bay) rather than onto Mare Island. Project activities do not involve the use and handling of substantial quantities of liquids, and will only minimally alter the ground surface; there are no proposed activities that would present a risk of flooding. Therefore, there would be No Impact related to flooding.

Conclusion:

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

- j. *Inundation by seiche, tsunami, or mudflow.*

Impact Analysis:

As noted in the baseline conditions discussion, seiches, tsunamis, and mudflows are not hazards associated with IA C2. Therefore, the project would have No Impact related to inundation by seiche, tsunami, or mudflow.

Conclusion:

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

References Used:

- ABAG. 2018b. Resilience Program, Rainfall-Induced Landslides interactive map, accessed 8/27/18 at <http://gis.abag.ca.gov/website/Hazards/?hlyr=debrisFlowSource>
- ABAG. 2018h. Resilience Program FEMA flood zone interactive map, accessed 8/29/18 at: <http://gis.abag.ca.gov/website/Hazards/?hlyr=femaZones>
- ABAG. 2018i. Resilience Program interactive map of Tsunami Inundation Area for Emergency Planning, accessed 8/29/18 at: <http://gis.abag.ca.gov/website/Hazards/?hlyr=tsunami>
- San Francisco Bay Regional Water Quality Control Board (Regional Water Board). 2008. Letter. Subject: Final IR19 Remedial Investigation and Interim Removal Action Summary Report, Lennar Mare Island, Vallejo, dated June 14, 2006. October 16.
- Regional Water Board. 2016. Letter. Subject: No Further Action for Storm Sewer System Near IR21/Buildings 386/388/390 Area, Former Mare Island Naval Shipyard, Solano County. June 8.
- California Resources Agency. 2018. Interactive map of Jurisdictional Dams. Accessed online 8/30/18 at: https://hub.arcgis.com/datasets/98a09bec89c84681ae1701a2eb62f599_0/data?geometry=-122.612%2C38.055%2C-121.675%2C38.244
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- CH2M HILL. 2003a. *Draft Assessment of the MUN Beneficial Use Designation for the Eastern Early Transfer Parcel Technical Memorandum*. July 1.
- CH2M Hill. 2006b. *Final IR19 Remedial Investigation and Interim Removal Action Summary Report*. June 14.

Department of Water Resources. 2018. Interactive map of levee locations. Accessed 8/29/18 at:

<https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Fgis.water.ca.gov%2Farcgis%2Frest%2Fservices%2Fstructure%2Fi17%2FDelta%2FLevees%2FCenterlines%2FFeatureServer%2F0&source=sd>

ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019

WESTDIV and City of Vallejo. 1998. *Mare Island Naval Shipyard Disposal and Reuse Final Environmental Impact Statement/Environmental Impact Report*. April.

PRC. 1995. *Preliminary Assessment/Site Inspection, Final Summary Report, Nonradiological Sites*. May 19.

PRC. 1996a. *Technical Memorandum: Tidal Influence Study, Mare Island*. November 20.

PRC. 1997. *Assessment of Beneficial Uses of Groundwater*. November 1.

San Francisco Estuary Institute (SFEI). 2000. *1999 Annual Report: San Francisco Estuary Regional Monitoring Program for Trace Substances*. San Francisco Estuary Institute, Richmond, CA.

SFEI. 2001. *2000 Annual Report: San Francisco Estuary Regional Monitoring Program for Trace Substances*. San Francisco Estuary Institute, Richmond, CA.

Solano County Office of Emergency Services (OES). 2017. *Emergency Operation Plan (EOP) – Solano County, California*. Updated January 2017. Accessed 8/28/18 at <https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=13271>

11. Land Use and Planning

Project Activities Likely to Create an Impact on Land Use and Planning: None

Description of Baseline Environmental Conditions/Explanation for No Impact Finding:

IA C2 is bound by Mare Island Strait and industrial areas to the east; by industrial areas to the north and south; and by commercial and residential areas to the west. The portions of IA C2 where this project would occur are entirely paved, covered with several railroad spurs, landscaped, or covered with buildings (SWA 2000).

In 1994, the Vallejo City Council accepted the Mare Island Final Reuse Plan (Reuse Plan) to guide reuse activities at Mare Island after closure of the Shipyard. The Reuse Plan was the basis for the Mare Island Specific Plan (City of Vallejo 2013), which was initially adopted in 1999, and subsequently amended. As specified in the Mare Island Specific Plan, the City of Vallejo zoned the developed portion of Mare Island, in which IA C2 falls, as “Mixed Use Planned Development” (City of Vallejo 2013). As presented in the Specific Plan, this land use includes the following:

- Office/research & development;
- Light industrial;
- Retail commercial; and
- On-site warehousing.

The Specific Plan also states that “Although its purpose is to provide primarily for employment uses, the mixed use category also allows residential uses.”

Other official planning documents related to Mare Island include the following:

- General Plan Amendment (City of Vallejo 2017); initiated by the City, which amends the City’s General Plan to include Mare Island as presented in the Reuse Plan. The City found that the Specific Plan is consistent with the Vallejo General Plan (City of Vallejo 2013).
- City of Vallejo Zoning Ordinance, which specifies a Mixed Use Planned Development for the area comprising IA C2 (City of Vallejo 2013).
- California State Lands Commission, 2002. *Mare Island Property Settlement and Exchange Agreement*. February 28, 2002. Recorded at Solano County Recorder’s Office on March 26, 2002. Document Number 02-37955.

Except for the westernmost portion of IA C2 slated for residential land use, IA C2 is planned for commercial and industrial land uses (Figure 1). The IA C2-wide Commercial/Industrial LUC would limit future development to commercial and industrial use for all portions of IA C2 that are currently zoned for commercial and industrial use, and would prohibit certain land uses (e.g., residences, hospitals, daycare facilities, and schools for persons less than 18) in those areas. All the sites included in this Initial Study are located in commercial and industrial areas that would be covered by the IA C2-wide Commercial/Industrial LUC. Additionally, 83 PCB Sites require recordation and implementation of a site-specific LUC to address PCB-impacted soil, concrete, and/or wood left in place at the site and/or maintenance of encapsulated surfaces (ERM 2019).

As discussed in the Solano County General Plan (Solano County 2008), habitat types throughout the County support rare or endangered animal and plant species. The County has developed the Solano Multi-Species Habitat Conservation Plan (HCP) to protect these species. The HCP identifies priority and nonpriority habitat areas; the General Plan focuses on priority habitat areas for conservation and preservation. As illustrated in maps provided in the General Plan, none of these priority habitat areas fall within Mare Island.

The Solano County General Plan also outlines the various plans and programs that have been established to protect marshes and the Sacramento-San Joaquin Delta area. The closest protection area to the project sites (White Slough Planning Area) is located across Mare Island Strait from Mare Island (Solano County 2008). No protected areas are located on Mare Island based on the map provided in the General Plan.

The City of Vallejo General Plan (City of Vallejo 2017) also establishes policies to “protect and enhance hillsides, waterways, wetlands, occurrences of special-status species and sensitive natural communities, and aquatic and important wildlife habitat.” The City’s General Plan includes an action to continue to participate in implementation of the HCP and does not establish any City-specific habitat conservation plans or natural community conservation plans that apply to IA C2.

Project activities would not conflict with existing land use plans because no zoning or land use changes are being proposed as a result of the project implementation. The cleanup actions proposed for the project would be consistent with the current and planned commercial/industrial land use and would not interfere with implementation of existing habitat/natural community conservation plans. Consequently, there would be No Impact from the project, and no further analysis of impacts is deemed necessary.

Analysis as to whether or not project activities would:

a. Physically divide an established community?

Impact Analysis:

Conclusion:

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

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

Impact Analysis:

Conclusion:

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

c. 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. 2013. *Mare Island Specific Plan*. Adopted March 1999, last amended August 2013. Accessed online at: <http://www.ci.vallejo.ca.us/common/pages/DisplayFile.aspx?itemId=32082>

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ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.

Solano County. 2008. *Solano County General Plan. Chapter 4 – Resources*. Accessed online at: <http://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=6494>

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

12. Mineral Resources

Project Activities Likely to Create an Impact on Mineral Resources: None

Description of Baseline Environmental Conditions/Explanation for No Impact Finding:

The following nonfuel mineral resources have been identified in Solano County: mercury, sand and gravel, clay, stone products, calcium, and sulfur (Solano County 2008). The Solano County General Plan contains a map depicting the locations of mines, processing plants, and mineral resource zones; none of these are identified within Mare Island. As also noted in the Solano County General Plan, natural gas fields are also present in Solano County; the gas fields listed in the General Plan are not located on or near Mare Island (Solano County 2008).

The project sites are currently developed with commercial or industrial land uses; and would remain in that state after project completion. Although unlikely, if mineral resources were present on Mare Island, access to those resources would be unchanged as a result of the project. Furthermore, project activities would have temporary effects restricted to the immediate area of the project sites and would not affect recovery of mineral resources at other locations (outside Mare Island). Therefore, the project would result in No Impact to the availability of known mineral resources or mineral resource recovery sites, and 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:

Solano County. 2008. *Solano County General Plan. Chapter 4 – Resources*. Accessed online at: <http://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=6494>

13. Noise

Project Activities Likely to Create Noise Impacts:

Project activities that are likely to increase noise levels are construction activities involving the use of heavy equipment, including:

- Excavation/cleanup and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.

Description of Baseline Environmental Conditions:

The existing primary noise sources on Mare Island are engine noises from commercial shipping, vessel traffic, current onsite commercial building tenants, and occasional aircraft overflights. Wind and wildlife produce ambient noise. This area is zoned for commercial and industrial use; existing noise sources in the area associated with that land use include vehicle traffic, truck loading and unloading, and equipment operation and repair, among other things. A formal noise study has not been conducted for the IA C2 vicinity.

The distances to the nearest sensitive receptors to any of the sites evaluated by this Initial Study are as follows:

- Residential housing: 1,600 feet from the closest indoor project site and 600 feet from the closest outdoor project site.
- School: 1,000 feet from the closest indoor project site.

In response to the requirements of 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 (USEPA, 1974). Noise level criteria to protect against hearing damage are identified as 24-hour overall noise (L_{eq}) 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, and have established noise-related regulations and standards. 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 federal Occupational Safety and Health Administration (OSHA) and the Division of Occupational Safety and Health of the State of California Department of Industrial Relations (known as Cal/OSHA) both specify regulations for permissible noise exposures for employees, dependent on the duration per day of noise exposure. For example, over an 8-hour workday, the allowable sound level is 90 dBA, but for 4 hours, the allowable sound level is 95 dBA. If noise levels exceed these allowable thresholds, both OSHA and Cal/OSHA regulations (Title 8 Subchapter 7, Group 15, Article 105 Section 5097) require a hearing conservation program to reduce noise levels experienced by a worker (OSHA 2008).

As required by state law, the City of Vallejo General Plan uses defined noise levels to establish the City's land use compatibility standards for noise (City of Vallejo 2017). That Plan specifies that Community Noise Equivalent Levels (CNELs) for industrial land uses, such as in IA C2, should not exceed 75 dBA day-night average sound level (CNEL); exterior noise levels up to 80 dBA may be allowed. The City General Plan also establishes actions to: update City regulations to 1) limit noise generating activities such as construction, demolition, and loading/unloading to the hours of 7:00 am and 7:00 pm in areas that may impact noise-sensitive land uses; 2) establish quantified vibration level limits; and 3) establish noise limits for exterior areas of new development and redevelopment.

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 and 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 FTA Transit Noise and Vibration Impact Assessment (FTA 2006) specifies an acceptable vibration threshold of 72 VdB (vibration decibels) for residential areas. However, the City of Vallejo Municipal Code states that "no use shall be operated in a manner which produces vibrations discernible without instruments at any point on the

property line of the lot on which the use is located” (Chapter 16.72 of the Vallejo Municipal Code). Table 7-1 of the FTA manual states that the approximate threshold of perception for many humans is 65 VdB.

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 up to 3 to 5 months per site (see the Project Description for the site-specific project durations). 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, jack hammers, and concrete scrappers (also known as scabblers). Sound attenuates rapidly with distance from the source. Table 12-1 below summarizes the sound levels expected to be associated with these sources, at distances of 50 feet and 600 feet. As seen in that table, at the closest distance where sensitive receptors would be present (600 feet from the source), sound levels would not exceed the 80 dBA threshold established in the City of Vallejo General Plan.

Table 12-1. Typical Sound Levels for Heavy Construction Equipment

Equipment	Sound Level at 50 feet (dBA)*	Sound Level at 600 feet***
Loader	85	63
Backhoe	80	58
Asphalt paver	89	67
Roller	74	52
Drill rig**	90	68
Jack hammer	88	66
Concrete scraper	89	67
Truck	88	66

* From: Federal Transit Administration Transit Noise and Vibration Impact Assessment (2006)

**Drill rigs taken from the UK DEFRA construction noise database (DEFRA, 2006)

*** Calculated using the following formula: Sound Pressure Level at 600 feet = Sound Pressure Level at 50 feet + 20 log (50/600)

Furthermore, sound from construction equipment would be further attenuated by conditions in the work areas; specifically:

- Sound generated during the indoor cleanup actions would be muffled by the site building.
- The level of noise generated by the equipment would be deflected by buildings that are between the work areas and the nearest public buildings.

The project work would not occur during restricted hours between 9:00 pm and 7:00 am. As discussed above, there are several different restrictions on the hours noisy work can be conducted. For this project, the more conservative restrictions are being applied, i.e., work being completed at the end of each day before 7:00 pm. For onsite cleanup workers, hearing protection would be used, consistent with the site-specific HASP, to reduce the potential that appropriate noise criteria would be exceeded while working at the project site. Workers would wear earplugs 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 be infeasible, administrative controls would be implemented, including adjusting employee work assignments to limit their noise exposure. With appropriate hearing protection, operation of the equipment 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 exposure to offsite noise sensitive receptors such as residences. However, the quantitative exposure thresholds specified in the General Plan and Municipal code are generally not applicable to short-term construction activities. Regardless, selecting the more restrictive of the General Plan and Municipal Code standards, operation of construction related equipment is to be prohibited between 7:00 pm and 7:00 am. The proposed project would prohibit construction activities during this period of the day and thus would be consistent with both the General Plan and Municipal Code.

Based on the above considerations, project-related noise impacts would be Less Than Significant.

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 equipment used during project activities, such as jackhammers and bulldozers, could contribute to groundborne vibration or noise levels. Table 12-2 below summarizes the vibration levels expected to be associated with these sources, at distances of 50 feet and 600 feet. Construction workers would wear appropriate hearing protection, and engineering controls would be used to reduce groundborne vibration or noise levels (USEPA 1971, 1980). Noise monitoring may be conducted, as needed, to confirm that workers are not exposed to hazardous noise levels.

Table 12-2. Typical Vibration Levels for Heavy Construction Equipment

Equipment	Vibration Level at 25 feet (VdB)*	Vibration Level at 600 feet (VdB)**	Distance from source at which vibration would reduce to 65 VdB *** (in feet)
Roller	94	53	232
Jack hammer	79	38	73
Large bulldozer	87	46	135
Loaded truck	86	45	125

From: Federal Transit Administration Transit Noise and Vibration Impact Assessment (2006)

** Calculated using the following formula: Vibration Level at 600 feet = Vibration Level at 25 feet + 30 log (25/600)

*** Calculated using the following formula: $x \text{ (feet)} = 10^{[(\log_{10}(25) - (65 - \text{Vibration Level at 25 VdB})/30)]}$

where x is the distance at which the vibration level attenuates to 65 VdB

Vibration levels expressed as root mean square (RMS) velocity in decibels (VdB)

Given the type of equipment to be used and the distances to sensitive receptors, offsite noise sensitive receptors are not expected to be exposed to excessive groundborne vibration or groundborne noise levels. Between jackhammers, rollers, bulldozers, and trucks, rollers were calculated to have the greatest potential for producing vibration that may be felt by offsite sensitive receptors. However, as shown in Table 12-2, vibration levels are not expected to reach 65 VdB within 600 feet of the source; therefore, at the closest residences, vibration would be imperceptible.

Table 12-2 also shows the distance from each type of equipment at which vibration would be imperceptible. In order to remain in compliance with the Vallejo Municipal Code, vibration generated by the equipment should not be perceptible at the property line. The Building 206/208 work area is approximately 500 feet from the property line; based on the calculated distances in Table 12-2, vibrations associated with construction equipment use in that area would not be perceptible at the property line. Building 116 is approximately 75 feet from the property line to the east and about 10 feet from the property line to the west. The exact locations of equipment use will depend on the requirements of the remediation program. As seen in Table 12-2, the use of vibration-causing equipment within the building may cause perceptible vibration at the property line. However, any such activities will be intermittent and short-term.

Work zone delineation would be set to protect the public from heavy construction equipment, as discussed in Section 8 (Hazards and Hazardous Materials). This delineation will also reduce the potential for passers-by to be exposed to vibration associated with this equipment.

In summary, cleanup activities associated with the Project are unlikely to expose sensitive receptors to excessive groundborne vibration or groundborne noise levels for the following reasons:

- At the nearest residences to the work areas, vibrations associated with construction equipment would be imperceptible.
- Most of the remediation work involving the use of equipment that could cause groundborne vibration would occur at locations far enough away from the property lines such that associated vibrations would not be perceptible at the property line.
- Work zone delineation will reduce the potential for passers-by to be exposed to vibration associated with construction equipment use.
- Vibration-causing remediation activities would be intermittent and short-term.

Therefore, the potential for the Project to result to expose sensitive receptors to excessive groundborne vibration or groundborne noise levels would be Less Than Significant.

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 activities would be short term in nature (3 to 5 months in duration), with each component of the project not expected to last longer than 3 months at each of the sites. 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, and there would be No Impact.

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. However, the distances to the nearest sensitive receptors are great enough (at least 600 feet) that additional mitigation to protect the sensitive receptors from noise caused by the site work is not necessary. In addition, the sites are located in portions of IA C2 currently used for commercial and industrial activity that also produces elevated noise levels. The proposed activity would not result in a significant change in noise 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 7:00 pm and 7:00 am. Thus, the potential for the project to result in a substantial temporary or periodic increase in ambient noise levels is Less Than Significant.

Conclusion:

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

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

Impact Analysis:

The project is not located within two miles of a public airport or public use airport, and the Project is not located within an airport land use plan. Therefore, there would be No Impact.

Conclusion:

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

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

Impact Analysis:

The project is not located within the vicinity of a private airstrip. Therefore, there would be No Impact.

Conclusion:

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

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14. Population and Housing

*Project Activities Likely to Create an Impact on Population and Housing: None**Description of Baseline Environmental Conditions/ Explanation for No Impact Finding:*

The non-residential population in IA C2 is approximately 930 persons (LMI 2018). There is currently no housing within IA C2; the current residential population is zero. A 6.3-acre portion on the western edge of IA C2 is currently vacant (at one time contained Building 866, demolished in 2006-2008) that is covered by asphalt, gravel and soil. This area is being cleaned up for future residential land use. None of the project sites with additional proposed remediation are within the future residential area.

The project involves temporary construction activities, and does not propose any new businesses, or new infrastructure that could result in substantial population growth. Replacement housing would not be needed as a result of the project because IA C2 does not contain any housing from which residents could be displaced. Project activities would occur in vacant portions of IA C2, from which workers would not be displaced. Project activities would be performed by a small temporary labor pool, and would not induce growth in the project vicinity, nor would the project affect existing housing or necessitate any construction of new or replacement housing in the project vicinity.

For these reasons, the project would have No Impact on population and housing, and 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:

- ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.
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15. Public Services

Project Activities Likely to Create an Impact on Public Services:

Project activities that could potentially impact public services are construction activities that would increase the number of workers and equipment present onsite. These activities could increase the need for law enforcement to: 1) protect these additional workers, 2) respond to accident situations, or 3) avoid or respond to willful damage or theft of construction supplies or equipment. Project-related activities could also increase the demand for fire protection. These construction activities include the following:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.

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 response time for VPD to respond from its office at 111 Amador Street, Vallejo, California 94590-6301 to the farthest site in IA C2 (the Building 206/208 Area) is dependent on the time of day, street traffic, police activity and other factors. According to Mapquest (2018), it takes approximately 10 minutes to drive the 3.7 miles from VPD's 111 Amador Street office to the Building 206/208 Area.

The Vallejo Fire Department (VFD) provides fire protection for Mare Island. The VFD does maintain an administrative office on Mare Island, but not an active service station. The response time for VFD to respond from its fire station at 1220 Marin Street, Vallejo, California 94590-6301 (Fire Station 21) to the farthest site in IA C2 (the Building 206/208 Area) is dependent on the time of day, street traffic, police activity and other factors. According to Mapquest (2018), it takes approximately 7 minutes to drive the 2.5 miles from the VFD 1220 Marin Street station to the Building 206/208 Area.

The nearest school to any of the project sites is a public elementary school (Mare Island Health and Fitness Academy) for kindergarten through 8th grade; this school is located outside IA C2, approximately 1,000 feet away from the closest project site. Currently, enrollment at this school is 417 students (California Department of Education 2018). Some of these students come from residences on Mare Island and some of the students come from residences in Vallejo on the other side of Mare Island Strait.

Three regional parks are present in Solano County; none of these parks are located on Mare Island (Solano County 2008). Mare Island contains the following parks located outside IA C2 in close proximity to the project sites:

- Alden Park (a neighborhood park – approx. 4 to 10 acres) is located near the intersection of Walnut Avenue and Rickover Street, and is immediately across Railroad Avenue from Building 116, inside which cleanup activities are proposed.
- Chapel Park (a neighborhood park – approx. 4 to 10 acres) is located near the intersection of Azuar Drive and 16th Street, approximately 500 feet from the proposed Building 206/208 excavation area.
- Club Drive Park (a community park – approx. 2 acres) on Club Drive (City of Vallejo 2013). This park is located approximately 1,400 feet from Building 206/208 Area, where cleanup activities are planned.

Kaiser Medical Center (more than 1.5 miles away) and Sutter-Solano Medical Center (more than 2.5 miles away), both in Vallejo, provide medical services and full-service 24-hour emergency room care for community residents. 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. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

- i. *Fire protection*
- ii. *Police protection*
- iii. *Schools*
- iv. *Parks*
- v. *Other public facilities*

Impact Analysis:

Project activities would be short term (3 to 5 months) and would employ a relatively small temporary workforce (an estimated 5 to 30 workers at any given time) from Bay Area locations outside Mare Island.

As described below, fire and police protection could be needed in the event of upset conditions, but would not represent a planned service demand for the project. Project-related activities could increase the demand for fire protection if they resulted in accidental fires. However, proposed Project activities would be conducted in accordance with the site-specific HASP and activity hazard analysis developed for the project, which would also include an Emergency Contingency Plan. Successful implementation of the Emergency Contingency Plan would minimize potential impacts related to fires. Further, the potential for fire hazards would be reduced through proper maintenance and operation of the machinery and vehicles, proper storage of fuels, and enforcement of safe work practices and other safety provisions as specified in the HASP. Cleanup activities could increase the need for law enforcement to: 1) protect cleanup workers, 2) respond to accident situations, or 3) avoid or respond to willful damage or theft of construction supplies or equipment.

Given the short duration of the cleanup activities, project workers would not be likely to relocate into homes on Mare Island, or to enroll their children in Vallejo School District schools unless they already lived in the district. This small number of project workers would also not significantly impact park usage in the project area.

The project involves cleanup activities, and would not create new structures or housing that would increase the number of people working in or residing in IA C2. Accordingly, post-cleanup conditions would have the same demand for public services as under current conditions.

Based on the small number of cleanup workers and the short duration of the project, there would not be a significant demand for public services during construction. Demand for public services after project completion would be the same as under current conditions. Therefore, alterations to existing or new public facilities would not be required, and project needs could be accommodated by the existing public services. Therefore, project-related impacts would be Less Than Significant.

Conclusion:

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

References Used:

California Department of Education. 2018. *School Profile: Mare Island Health and Fitness Academy*. Accessed online 9/4/18 at: <https://www.cde.ca.gov/sdprofile/details.aspx?cds=48705816051437>

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16. Recreation

*Project Activities Likely to Create an Impact on Recreation Resources: None**Description of Baseline Environmental Conditions/Explanation for No Impact Finding:*

Project activities would be short term (3 to 5 months) and would employ a relatively small temporary workforce (an estimated 5 to 30 workers at any given time) from Bay Area locations outside Mare Island.

Recreational resources on Mare Island include the following:

- The Mare Island Sports Complex is a full-service sports facility located at 785 Walnut Avenue on Mare Island, approximately 0.6 mile north of the project sites. This facility contains indoor soccer fields, batting cages, basketball and volleyball courts, and a CrossFit gym (Greater Vallejo Recreational District 2018).
- The Mare Island Shoreline Heritage Preserve (MISHP), a 251-acre nature and historic-focused park, is present on the south end of Mare Island (Mare Island Heritage Trust 2016a). The MISHP is only open on Fridays, Saturdays and Sundays. The only day of the week where there would be a potential traffic conflict due to remediation activities is on Fridays.
- A hiking and wildlife viewing trail has been established on the western side of Mare Island. This trail offers views of San Pablo Bay, Mt. Diablo and Mt. Tamalpais, the Carquinez Strait, and the Sonoma and Napa valleys (Mare Island Heritage Trust 2016b).

Mare Island also contains several smaller parks; all are located outside IA C2. The following parks are closest to the project sites:

- Alden Park (a neighborhood park – approx. 4 to 10 acres) is located near the intersection of Walnut Avenue and Rickover Street, and is immediately across Railroad Avenue from Building 116, inside which cleanup activities are proposed.
- Chapel Park (a neighborhood park – approx. 4 to 10 acres) is located near the intersection of Azuar Drive and 16th Street, approximately 500 feet from the proposed Building 206/208 excavation area.
- Club Drive Park (a community park – approx. 2 acres) on Club Drive (City of Vallejo 2013). This park is located approximately 1,400 feet from the Building 206/208 Area, where cleanup activities are to be implemented.

None of these recreational resources are located at the project sites. During cleanup activities, cleanup workers could make use of nearby parks or trails during breaks, but their use would be temporary, and the relatively small number of workers using these facilities would not place a significant demand on these resources. Given the short duration of the cleanup activities, project workers would not be likely to relocate into homes on Mare Island. The project involves cleanup activities, and would not create new structures or housing that would increase the number of people working in or residing in IA C2. Accordingly, post-cleanup conditions would have the same demand for recreational use as under current conditions. No zoning or land use changes are being proposed as a result of project implementation, and the project does not include the construction or expansion of recreational facilities. For these reasons, there would be No Impact on recreational use, and no further analysis of 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:

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:

Conclusion:

- ☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated

- ☐ Less Than Significant Impact
☒ No Impact

References Used:

ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.

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17. Transportation and Traffic

Project Activities Likely to Create an Impact:

Project activities that could impact traffic in the vicinity of IA C2 are construction activities that would increase the number of vehicles traveling to and from the project sites, including:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration, including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.
- Vehicular traffic from workers involved with site cleanup.
- Transport of equipment and supplies.
- Emplacing temporary traffic and engineering controls (i.e., fences, barricades, signs, caution marking, and/or traffic control staff/flaggers) as necessary. These measures would be implemented to protect the public from cleanup activities and cleanup equipment. Traffic controls may apply to vehicles, bicycles, and/or pedestrians. The duration of traffic and engineering controls would not exceed the duration of these related cleanup activities and no permanent alterations in the layout of fences, roads, sidewalks, or other pathways are anticipated.

Description of Baseline Environmental Conditions:

Regional and local access routes to Mare Island are as follows:

Regional Access Routes:

- | | |
|------------------|------------------|
| • Interstate 80 | • Interstate 780 |
| • State Route 37 | • State Route 29 |

Local Access Routes (East/West)

- | | |
|---|-------------------|
| • Tennessee Street-Mare Island Causeway | • Curtola Parkway |
|---|-------------------|

Local Access Routes (North/South)

- | | |
|-------------------|---------------------|
| • Wilson Avenue | • Sacramento Street |
| • Mare Island Way | |

Mare Island Causeway serves as the primary east/west access road from Vallejo.

The Mare Island circulation system includes arterials, collectors, and residential streets (see Figure MAP MTC-3 in Attachment D). The arterials are Mare Island Causeway and the northernmost portion of Railroad Avenue. The remainder of Railroad Avenue (south of G Street), Walnut Avenue, and Azuar Drive, all of which trend north/south, are collector streets, in addition to the east/west-trending G Street (City of Vallejo 2013). These collector roads support two-way traffic with one lane in each direction. Railroad Avenue connects directly with State Route 37. The streets on Mare Island are local roads and have light, generally free-flowing traffic.

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." The peak levels of service (LOS) for roads in the project vicinity are shown in Table 16-1, below.

Table 16-1. Levels of Service for Roads in Project Vicinity

Street	Level of Service (LOS)	Existing Daily Traffic Volume
Walnut Avenue South of State Route 37	B	2,900
Railroad Avenue South of State Route 37	B	3,500
Mare Island Causeway	C	9,300

Source: Vallejo General Plan (City of Vallejo 2017)

LOS B = Stable operation or minimal delays

LOC C = Stable operation or acceptable delays

These roads are currently used by passenger and commercial vehicles, including trucks. State Route 37 is a busy thoroughfare with two lanes of traffic in either direction. This highway has an LOS rating of F (stop and go traffic) (STA 2013).

The Vallejo General Plan (City of Vallejo 2017) contains the following policies related to transportation and traffic:

- **Policy MTC-1.1.** Enhance regional transit service for residents, employees, and visitors;
- **Policy MTC-1.2.** Increase regional transit and ferry ridership to and from Vallejo, particularly by commuters and visitors;
- **Policy MTC-1.3.** Provide enhancements to the local transit network that make it easier and more convenient to use regional transit;
- **Policy MTC-1.4.** Ensure that Vallejo is well connected to road, rail, air, and maritime systems in support of both mobility and local economic development.
- **Policy MTC-2.1.** Prioritizing pedestrian, bicycle, and automobile safety over traffic flow, including preparation of a city-wide Bicycle and Pedestrian Master Plan, and prioritizing sidewalk and bicycle projects;
- **Policy MTC-2.2.** Promoting safety programs to educate road users about risks and responsibilities;
- **Policy MTC-2.3.** Ensuring adequate emergency vehicle access in all areas of Vallejo;
- **Policy MTC-2.4.** Maintaining a transportation network that provides mobility for all ages and abilities, for all areas of the community;
- **Policy MTC-2.5.** Maintaining a street classification system that establishes user mode priorities and associated performance standards for each street type;
- **Policy MTC-2.6.** Improve street pavement conditions, prioritizing neighborhood corridors and arterials; and
- **Policy MTC-2.7.** Increase accessibility for and use of streets by pedestrians, bicyclists, and transit riders.

- **Policy MTC-2.8.** Decrease dependence on single-occupant vehicles by increasing the attractiveness of other modes of transportation.
- **Policy MTC-2.9.** Encourage increased local transit ridership to work, school, shopping, and recreation.
- **Policy MTC-2.10.** Encourage provision of a variety of transportation services for seniors and community members with limited mobility.

The Mare Island Specific Plan (City of Vallejo 2013) noted the following transportation-related conditions that affect general transportation policies:

- Vehicular access to Mare Island from the east is via the Causeway.
- Vehicular access to Mare Island from the north is via the State Route 37 interchange.
- Rail service is via the Causeway.
- Commuter ferries

Future transportation plans factored into the Specific Plan include the following:

- Port facilities at Mare Island may be used by maritime freight vessels and/or commuter ferries
- The possible construction of a sea plane base or reuse of the former naval helicopter landing sites. There are no plans for a seaplane base or a helicopter land site on IA C2.
- Improvements to State Route 37 and Wilson Avenue/Mare Island Way, which would improve access at the North Gate and over the Causeway.

There is currently no public transit system on the EETP. The proposed public transit route on the EETP is a loop system from the Mare Island Causeway to west on “G” Street, south on Walnut Avenue, west on Kansas Street, south on Azuar Drive, west on Oklahoma Street, south on Flagship Drive, northeast on Club Drive, north on Azuar Drive, east on Bagley Street, north on Railroad Avenue to “G” Street (see Figure 5.2 in Attachment D).

Bicycle lanes are present in portions of Mare Island roadways; no bicycle lanes have been established in the main roadway in areas adjacent to the two remediation sites (Railroad Avenue). There are three types of designated bikeways or routes planned for Mare Island (see Figure 5-3 in Attachment D), as summarized below:

- **Class I Bikeway/Multi-Use Path: Off-Street.** The Mare Island Specific Plan (City of Vallejo 2013) proposes an off-street, multi-use Class I bikeway/path around the east and west perimeter of the developed portion of Mare Island (East Island Path and West Island path, respectively) and along Walnut Avenue. Due to the developed nature of the Island, these bikeways/paths would not in all cases include all elements of a typical Class I multi-use path, such as a continuous route with limited interruptions, grade-separations, wide intersection approaches, and signage.

The West Island Path generally follows the alignment of Azuar Drive and Flagship Drive; an extension along Nereus at the Marine Parade Grounds is planned for a possible connection with a future pathway to the open wetlands area on the west side of the Island. The East Island Path would connect along 8th Street with the Walnut Avenue bikeway/path and follow the alignment of Walnut Avenue and Club Drive southward to end at the proposed Regional Park, which is currently the Mare Island Historic Preserve.
- **Class II Bikeway: On-Street, Dedicated Lane.** This class of bikeways requires pavement markings identifying a separate, on-street lane for bicycles. The Mare Island Specific Plan (City of Vallejo 2013) proposes a Class II bikeway along Flagship Drive from Azuar Drive to approximately Nereus Street.
- **Class III Bikeway: On-Street, Shared Use Sign Designation.** This class of bikeways, or bike routes, provides for shared use between bicycles and motor vehicles. Class III bike routes are designated through the installation of bike route signs and do not require pavement markings. The Mare Island Specific Plan (City of Vallejo 2013) proposes Class III bikeways in Azuar Drive between the Kansas (formerly 5th) Street intersection and the roundabout, and in Walnut Avenue from G Street to 8th Street.

Analysis as to whether or not project activities would:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit*

and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

Impact Analysis:

The project work would generate a variety of different trips including trucks delivering equipment and materials, personnel and support vehicles, and trucks transporting materials off Mare Island. Project-related vehicles would travel on designated truck routes (Railroad Avenue) already being used by commercial vehicles, and would not drive on residential streets or on streets adjacent to schools. In addition, the project includes the use of temporary traffic and engineering controls (i.e., fences, barricades, signs, caution marking, and/or traffic control staff/flaggers) as necessary; these traffic controls may apply to vehicles, bicycles, and/or pedestrians. There are no designated bicycle pathways in the portion of Railroad Avenue that is adjacent to the work areas.

The cleanup actions related to lead soil in the 206/208 Area are expected to generate the largest number of truck trips (approximately 500 truck trips for export and approximately 500 total truck trips for import for restoration over the course of up to 3 to 5 months) and the other cleanup actions would require fewer truck trips (from approximately 2 to 30 total truck trips). Export of excavated material and import of backfill material would require the maximum number of truck trips and these activities would occur over a short period of time (an estimated 40 daily truck trips). 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. For the Building 116 remediation, the number of vehicles performing indoor work and the offhaul of the contaminated media would be smaller (an estimated maximum of 10 truck trips per day) and the offhaul would be shorter in duration (2-3 months).

The project activities would include traffic at various times and locations. To avoid interfering with non-project-related traffic flow, as noted in the Project Controls section above, vehicle traffic on and off Mare Island associated with the cleanup activity may be restricted, as necessary, to hours after the morning commute peak (after 9:00 a.m.) and before the afternoon commute peak (before 3:00 p.m.). Given the low number of anticipated daily truck trips, these trips would not create substantial congestion on the adjacent roadways.

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, wood, sediment, concrete, asphalt, brick, and/or waste water) (ERM 2019); however, each site has an ample nearby support area such that no stockpiling would need to occur in public streets. The cleanup activities at Building 116 are indoors, and impacts to street use at that site would be limited to the additional traffic generated by cleanup activities. The excavation at the Building 206/208 area could extend into Bagley Street; this street is not a collector street, and alternate routes are available for traffic in the area. The use of traffic controls should reduce impacts to traffic circulation patterns. The vehicles that would be used at both sites are compatible with the current street designs. Therefore, impacts to pedestrian and bicycle circulation from the project would be limited, involving short term blockage of streets as trucks enter/exit the work areas. The proposed work would not occur on designated bike paths or pedestrian routes, which are planned for the future. Mare Island does not have any mass transit.

In summary, cleanup activities associated with the Project are unlikely to significantly affect circulation patterns for the following reasons:

- The associated traffic increase would be relatively small, and of short duration.
- Project-related traffic is compatible with the existing roadways, and would travel on an existing truck route.
- If needed, project-related traffic would be restricted to periods outside peak traffic hours, and traffic control would reduce the potential for impacts to vehicular traffic.
- There are no established walkways or bicycle paths in the immediate vicinity of the work areas, and traffic control would reduce the potential for impacts to pedestrian or bicycle traffic.
- Lane closure would be limited to Bagley Street; this street is not a collector street, and alternate routes are available for traffic in the area.
- Project activities would not affect mass transit, which does not currently exist on Mare Island.

Therefore, the project would not conflict with applicable plans, ordinances, or policies related to the pedestrian and bicycle performance of the circulation system would be Less Than Significant.

Conclusion:

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

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

Impact Analysis:

The project may result in an estimated maximum of approximately 500 total truck trips during excavated material export and approximately 500 total truck trips during backfilling of the excavation at the Lead Soil in Building 206/208 Area over the course of up to 3 months. The rest of the cleanup actions would require fewer truck trips (2 to 30 trips). To avoid interfering with non-project-related traffic flow, as noted in the Project Controls section above, vehicle traffic on and off Mare Island associated with the cleanup activity may be restricted, as necessary, to hours outside peak commuting periods (before 9:00 am and after 3:00 pm). Project-related vehicles would travel on designated truck routes (Railroad Avenue) already being used by commercial vehicles, and would not drive on residential streets or on streets adjacent to schools. In addition, the project includes the use of temporary traffic and engineering controls (i.e., fences, barricades, signs, caution marking, and/or traffic control staff/flaggers) as necessary; these traffic controls may apply to vehicles, bicycles, and/or pedestrians.

As noted above, the existing traffic volume on Railroad Avenue is estimated at 3,500 vehicles daily; project-related traffic would represent a small incremental increase (40 vehicles per day, or slightly more than 1 percent of the current traffic load). In addition, the project-related vehicles are consistent with the types of vehicles currently using the roads in the project area, and the construction activities are short-term. Therefore, it is unlikely that the project would result in a change in the LOS.

The traffic circulation improvements envisioned in the Vallejo General Plan would be implemented after the project activities are completed. There are no bicycle paths, pedestrian walkways, or public transit in the immediate project area; thus project-related traffic would not impede use of such facilities. Furthermore, the project does not include the construction of any structures that would impede the circulation improvements in the General Plan.

In consideration of the above, the project would not conflict with an applicable congestion management plan, and the impact would be Less Than Significant.

Conclusion:

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

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

Impact Analysis:

The project activities would not require air travel or transport; project workers, supplies, and equipment would travel to the project sites using ground transportation. In addition, the project does not involve the construction or alteration of any structures (e.g., tall buildings or antennae) that could affect air traffic patterns. Traffic control activities would conform to the applicable specifications of the *Manual of Traffic Controls for Construction and Maintenance Work Zones* (California Department of Transportation 1996). Based on the above considerations, the project would have No Impact.

Conclusion:

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

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

Impact Analysis:

Both onsite and around the site, safety is a priority. The project does not involve any modifications to existing roadways. If the construction operations create potentially hazardous conditions to traffic, traffic control measures such as fences, signs, and other devices would be used to direct traffic and prevent vehicle accidents or injury to people. No materials or equipment would be stored where it would interfere with the free and safe passage of facility personnel and tenants. Vehicles associated with the work would be required to follow all applicable speed limits and traffic laws. Construction vehicles not intended for roadway use (such as excavators, backhoe, bulldozer, or grader), would not be present on roadways except as loaded on suitable transport vehicles; therefore, the project would introduce no incompatible road uses. At the end of each day's work and at other times when construction operations are suspended for any reason, obstructions would be removed from roadways to allow unrestricted use by facility and tenant traffic.

An appropriate traffic control plan will be provided to the City of Vallejo for informational purposes, and would adhere to all rules and regulations to protect vehicles, pedestrians, and site workers. Detours, if necessary, would be created in accordance with the traffic control plan. Impacts on road use would be short-term, with an anticipated duration of up to 3 to 5 months per site, and there would be no permanent impacts to the road design.

Because the project would not introduce roadway design features or incompatible uses, the project would result in No Impact.

Conclusion:

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

- e. *Result in inadequate emergency access.*

Impact Analysis:

Cleanup activities would occur on two localized sites, away from public roads. Nearby roadways would be used by project vehicles when entering or leaving the site, but that use would not significantly affect use by emergency vehicles. Appropriate traffic control plans would 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; if one route is being used by project-related vehicles such that access by emergency vehicles would be impeded, other routes are available for emergency access.

Vehicles transporting excavated materials or imported fill materials/asphalt for site restoration would be present at the sites for short periods during loading and unloading activities. At the indoor site (Building 116), the presence of these vehicles and other heavy equipment could restrict emergency access into the building; however, emergency egress routes would be established and maintained in the project-specific Health & Safety Plans.

With proper emergency planning as noted above, project-related impacts would be Less Than Significant.

Conclusion:

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

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

Impact Analysis:

As noted above, there is currently no public transit system within IA C2, and remediation activities would be completed before such a system is implemented. The traffic circulation improvements envisioned in the Vallejo General Plan would be implemented after the project activities are completed; the project does not include the construction of any structures that would impede the circulation improvements in the Vallejo General Plan or

establishment of the bikeways and routes presented in the Mare Island Specific Plan. Project-related traffic would use Railroad Avenue and Bagley Street, neither of which contain bicycle paths or pedestrian walkways. The traffic control plan for each site would include measures to safely divert bicycle and pedestrian traffic, as needed. These measures would include the use of delineators, signage, and/or flaggers. Project-related road use would be short-term, anticipated to last approximately 3 to 5 months. There would be no change in road design, thus no permanent impacts to the safety of future bicycle or pedestrian facilities would occur.

Therefore, the project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, and there would be No Impact.

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*.
- City of Vallejo. 2013. *Mare Island Specific Plan*. Adopted March 1999, last amended August 2013. Accessed online at: <http://www.ci.vallejo.ca.us/common/pages/DisplayFile.aspx?itemId=32082>
- City of Vallejo. 2017. *Propel Vallejo: General Plan 2040*. August 29. Accessed online 9/4/18 at: <http://www.cityofvallejo.net/common/pages/DisplayFile.aspx?itemId=12181697>
- ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.
- Solano Transit Authority (STA). 2004. *I-80 / I-680 / I-780 Transit Corridor Study*. July 14.
- Solano Transit Authority (STA). 2013. *Congestion Management Program*. December.

18. Tribal Cultural Resources

Project Activities Likely to Create an Impact on Tribal Cultural Resources:

Project activities that could potentially impact Tribal cultural resources are construction activities involving disturbance of subsurface soils where Native American artifacts are present, including:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.

Description of Baseline Environmental Conditions:

Early indigenous inhabitants, including the Patwin and Carquin peoples, settled in permanent villages near Vallejo, with seasonal camps close to the locations of resources needed during those seasons (City of Vallejo 2017). Sites were often located near fresh water sources where plant and animal life was abundant. According to the Mare Island Specific Plan (City of Vallejo 2013), no prehistoric archaeological resources retaining integrity have been found, to date, on Mare Island. The Specific Plan noted the potential for such finds in areas undisturbed by modern development. All of the project sites have been developed.

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 midden sites indicative of Native American occupation were identified. Possible sites with artifacts predating written records that may lie below some developed portions of Mare Island were also identified (Navy 1994). None of the recorded locations of these sites are near the two sites included in this Initial Study.

DTSC contacted the Native American Heritage Commission (NAHC) and requested that NAHC conduct a search of the Sacred Land File for the Mare Island Lennar, Eastern Early Transfer Parcel project (Site). A search of the Sacred Lands File was conducted with negative results. DTSC sent letters to the three Tribal contacts provided and included four figures locating the Site as attachments. One request for Tribal contact consultation was received,

from the Yocha Dehe Winton Nation. The consultation between representatives of DTSC and the Yocha Dehe Winton Nation was held in September 2017. The Tribal government initially requested that Native American Monitors be onsite during ground disturbing activities; however, the Tribe instead decided that they will provide Tribal sensitivity training before field activities begin. DTSC's Office of Environmental Equity will assist with this coordination.

Analysis as to whether or not project activities would:

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

Impact Analysis:

The California Register of Historical Resources does not contain any known Native American tribal resources in IA C2. Due to the extent of industrial development within the Project Area, potential for undisturbed tribal cultural resources is low. As noted above, DTSC has completed necessary tribal notification pursuant to Assembly Bill 52 as part of their CEQA review process for the project. No Tribal Cultural Resources were identified by NAHC or the Tribes. Therefore, the project would result in a Less than Significant Impact.

Conclusion:

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

- ii. *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

Impact Analysis:

No Native American tribal resources have been identified in IA C2. Due to the extent of industrial development within the Project Area, potential for tribal cultural resources is low. As noted above, DTSC has completed necessary tribal notification pursuant to Assembly Bill 52 as part of their CEQA review process for the project.

As required by LMI, prior to initiating any ground disturbance cleanup, workers will be made aware of the potential for encountering items of potential archaeological interest during excavation activities. To make sure that Native American cultural artifacts are treated sensitively and are not disturbed, LMI and its environmental remediation workers that perform intrusive activities on the EETP are required to undergo Cultural Resources Sensitivity Training offered by the Yocha Dehe Winton Nation. This training outlines the steps to take if artifacts / remains are encountered during environmental investigation / remediation work. The training includes contact information for individuals to be notified in the event of accidental discovery of potential cultural or archaeological resources or human remains, and instructs workers not to touch, move, or take photographs or videos of suspected artifacts or remains.

The following procedures related to the accidental discovery of potential cultural or archaeological resources or human remains are included in the Remedial Action Plan (see also the Project Controls section of this Initial Study):

- All activities involving subsurface disturbance will be performed in accordance with the Archaeological Treatment Plan for Mare Island, Vallejo, Solano County, California (PAR Environmental 2000) (ATP). As required by LMI, Contractors would be made aware of the potential for encountering items of potential archaeological interest during excavation activities. LMI and its Contractors will receive Native American Cultural Resources Sensitivity Training from the Yocha Dehe Winton Nation prior to beginning any intrusive field activities.
- In the event of an accidental discovery of potential cultural or archaeological resources, LMI's Contractors shall immediately suspend excavation or other intrusive activities and cordon off the area within a 100-foot buffer zone. LMI and its archaeological contractor, PAR Environmental, will be consulted to determine the

best course of action regarding the potentially significant items. In addition, the DTSC Project Manager would be notified. If it is determined that the objects are Native American in origin, DTSC would contact the Yocha Dehe Wintun Nation. In accordance with the Native American Cultural Resources Sensitivity Training, LMI and its contractors will not touch or move the artifacts/remains, and will not take photographs or videos of the artifacts/remains. After discussion with the Tribal Contacts and or their respective Cultural Resources Managers and in collaboration with DTSC (including the Office of Environmental Equity) and LMI, measures will be implemented as deemed necessary to record and/or protect the cultural or archaeological resources. Work in the area of any such discovery would only be allowed to continue after completion of the archaeological/tribal consultation.

- In the event of an accidental discovery of human remains during ground disturbing activities, excavation or disturbance of the site or any nearby area shall stop immediately, and the County Coroner will be notified in accordance with applicable laws and regulations (specifically H&SC Section 7050.5). The coroner will determine disposition within 48 hours. If the coroner determines that the remains are Native American, the coroner will be responsible for contacting the California Native American Heritage Commission (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). If Native American human remains or any associated grave goods are found, procedures would be implemented as required by as required in accordance with Section 106 of the National Historic Preservation Act and Section 2(3) of the Native American Graves Protection and Repatriation Act Section 2(3), which requires work to be stopped in the area of the discovery. (see also above bullet)

Based on the above considerations, the project would result in a Less than Significant Impact.

Conclusion:

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

References Used:

- City of Vallejo. 2013. *Mare Island Specific Plan*. Adopted March 1999, last amended August 2013. Accessed online at: <http://www.ci.vallejo.ca.us/common/pages/DisplayFile.aspx?itemId=32082>
- City of Vallejo. 2017. *Propel Vallejo: General Plan 2040*. August 29. Accessed online 9/4/18 at: <http://www.cityofvallejo.net/common/pages/DisplayFile.aspx?itemId=12181697>
- Navy. 1994. *Basewide Environmental Baseline Survey/Community Environmental Response Facilitation Act Report for Mare Island Naval Shipyard*. Final. December.

19. Utilities and Service Systems

Project Activities Likely to Create an Impact on Utilities and Service Systems:

Project activities that could potentially impact utilities and service systems are construction activities that could increase demand on water supplies or waste disposal/recycling facilities, including:

- Excavation/removal and stockpiling of contaminated soil, concrete, asphalt, brick, sediment, and/or wood using appropriate construction equipment in select areas (may include excavator, backhoe, bulldozer, jack hammer, or grader); loading the contaminated media onto dump trucks.
- Offsite transport and disposal/recycling of excavated soil, concrete, asphalt, brick, sediment, waste water, and/or wood to appropriate facilities based on waste characterization and importation of clean soil.
- Site restoration, including backfill of all excavated areas and replacement of pavement to match pre-excavation conditions.

Description of Baseline Environmental Conditions:

There is no wastewater treatment on Mare Island. The sanitary sewer system runs across Mare Island Strait to Vallejo Flood & Wastewater District processing plant in south Vallejo.

Utility services are supplied by the City of Vallejo (sewer and potable water), AT&T (telephone), and Island Energy (power). Table 2 (see Project Description) presents the licensed landfills that will potentially service the project; as of the date of this study, these landfills have adequate capacity to serve the limited waste disposal/recycling needs of the project.

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 could be generated during project activities as part of equipment or vehicle rinsing/washing, or decontamination processes employed during sampling activities. This waste would be managed in accordance with the *Final Soil and Groundwater Management Plan* (CH2M HILL 2001). As discussed in Section 9.0 (Hydrology and Water Quality), limited quantities of groundwater would be expected to migrate into the excavations because excavations would be conducted during the dry season and would not extend into groundwater; therefore, a need for dewatering is not anticipated. The limited anticipated volume of water produced as a result of cleanup activities (less than 1,000 gallons per day) would not be a substantial load to the existing disposal systems.

The waste water would either be containerized and disposed appropriately offsite or would be discharged under permit to the Vallejo Sanitation & Flood Control District (now referred to as the Vallejo Flood & Wastewater District) system if it were demonstrated to meet discharge requirements. Wastewater off-hauled for offsite disposal would be transported to appropriately-licensed facilities with capacity for the waste. Due to the small anticipated volume, the generated wastewater would not impact wastewater treatment and disposal facilities. Therefore, project-related impacts would be Less Than Significant.

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 substantial water demand (estimated at 1,000 gallons per day) or wastewater generation (less than 1,000 gallons per day). Excavation activities do not require a significant amount of water from the water supply system. The volume of groundwater, if any, would be limited because the excavation activities would occur during the dry season, and the excavation depths would not extend into groundwater. Limited volumes of wastewater are anticipated to be generated during the cleanup actions. However, this wastewater would be containerized and disposed offsite at an appropriate disposal facility (Table 2) or discharged under permit to the Vallejo Sanitation & Flood Control District (Vallejo Flood & Wastewater District) system. Therefore, the project would not require expansion of existing water or wastewater facilities or the construction of new facilities and there would be No Impact.

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:

After removal activities are complete, the ground surface would be restored to pre-cleanup grade; as such, the project would not substantially alter the existing drainage pattern of the site. Therefore, the project activities would not require the construction of new storm water drainage facilities or the expansion of existing facilities and there would be No Impact.

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 (estimated at 1,000 gallons per day) would be needed for vehicle and 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. Therefore, project-related impacts would be Less Than Significant.

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:

A limited volume of wastewater is expected to be generated in association with the project (less than 1,000 gallons per day). This wastewater would be: (1) containerized and disposed offsite at an appropriately-licensed facility, after it is determined acceptable for management at that facility and the facility confirms it has adequate capacity for the waste; or (2) treated, if needed to meet discharge requirements, and discharged under permit to the Vallejo Sanitation & Flood Control District (Vallejo Flood & Wastewater District) system. The discharge permit would specify quality and quantity limitations to which the discharge would adhere; if the volume of wastewater exceeded those limits, the offsite disposal approach would be employed. Based on the limited volumes of wastewater involved, adequate capacity exists in either case to accommodate project activities. Therefore, there would be No Impact.

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 (Table 2 of Project Description). Facilities included in this table can accept a variety of wastes, including nonhazardous, California-hazardous and RCRA-hazardous. The waste would be sampled and analyzed in advance of transport, and the destination landfill would use the testing results to confirm that it is able to accept the waste (by type and volume). The volume of waste anticipated for the project (less than 600 truckloads) is typical of many cleanup projects, and one or more of the facilities provided in Table 2 would be able to adequately service the project. Therefore, project activities are expected to have No Impact related to the permitted capacity of landfills.

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/recycling of waste would be conducted in accordance with the *Final Soil and Groundwater Management Plan* (CH2M HILL 2001) and would comply with federal, state, and local statutes and regulations (ERM 2019). Therefore, project activities are expected to have No Impact with regard federal, state, and local statutes and regulations related to solid waste.

Conclusion:

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

References Used:

CH2M HILL. 2001. *Final Soil and Groundwater Management Plan, Lennar Mare Island, Vallejo, California*. November.

ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.

20. Wildfire

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

IA C2 is located in the eastern portion of Mare Island (Figure 1). The approximately 115-acre area is bound by industrial areas and Mare Island Strait to the east, by industrial areas to the north and south, and by residential areas to the west. Most of IA C2 is paved or developed with industrial structures constructed as part of Shipyard operations. Many of these buildings are currently occupied, with commercial/industrial uses. As is typical of industrial areas elsewhere, heavy equipment and other materials (wood, metal, glass, concrete, electrical equipment, paint, and other industrial supplies) are currently stored in IA C2, and truck traffic is associated with the businesses present in IA C2. Except for a residential area in the westernmost portion of IA C2, the remainder of the IA is slated for future commercial/industrial land use. The ground surface outside most structures is paved, except for a few small landscaping areas and contains several railroad spurs (ERM 2019).

Wildlands pose a hazard because they are susceptible to wildfire. Maps identifying areas posing threat of wildland fires have been prepared by state and local agencies (Solano County OES 2017, Cal Fire 2008). Based on review of those maps, the area containing IA C2 would primarily be considered "Urban Unzoned" and/or "Non-Wildland/Non-Urban"; however, areas along the perimeter of IA C2 have a moderate or high threat of wildland fire. Wildlands are located approximately 0.50 mile southeast of the proposed Project boundary at the Mare Island Shoreline Heritage Preserve. Other vegetated areas in the vicinity include Mare Island Memorial Park, located adjacent to the proposed property to the northwest and Mare Island Golf Club, located approximately 0.25 mile southwest of the proposed Project Area.

IA C2 is not located in or near any State Responsibility Areas and is not located within an area classified as a very high fire hazard severity zone (Cal Fire 2008); consequently, no further analysis is required.

Analysis: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

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

Impact Analysis:

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:

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:

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:

Conclusion:

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

References Used:

Cal Fire, California Department of Forestry and Fire Protection. 2008. *Solano County FHSZ Map*. Accessed online 5/28/19 at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_solano

ERM. 2019. *Investigation Area C2 Remedial Action Plan, Lennar Mare Island, Vallejo, California (Draft for Public Review)*. October 1, 2019.

18. 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 removing potential sources of contamination in soil, wood, sediment, asphalt, brick, and concrete in IA C2, which could also reduce potential impacts to surface water at Mare Island Strait and groundwater quality. The project areas temporarily disturbed by the cleanup activities would not impact the adjacent habitats of endangered and nonendangered species, including migratory species, or offshore habitats (Mare Island Strait, San Pablo Bay). There are no identified natural habitats, wildlife corridors, or endangered species in the project area. 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, and reduce the number or restrict the range of a rare or endangered plant or animal. Several historical archaeological sites considered to be contributing elements of the NRHP District are located in IA C2; the work areas do not fall within the immediate area of these sites. Therefore, project activities would conform to requirements of the Architectural Heritage and Historic Preservation Ordinance (Chapter 16.38 of the Vallejo Municipal Code). In addition,

precautions would be followed to ensure there is no damage to cultural or Tribal resources in the event such are encountered in the subsurface during excavations, including consultation with cultural experts. As a result, the remediation activities should not have adverse effects to known or unknown cultural resources or to significant Native American artifacts.

- 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 areal extent and duration, would result in the construction of no new structures/buildings, and would return the ground surface in outdoor areas to pre-project conditions. Post cleanup project conditions would therefore have No Impact. During construction activities, the potential exists for impacts to air quality, cultural resources, greenhouse gas emissions, hazards/hazardous materials and noise through the operation of project-related equipment, transport of contaminated materials, and disturbance of subsurface conditions; however, project controls and other BMPs (including regulatory requirements) would be instituted to reduce those impacts to Less Than Significant. In addition, proper project planning would reduce the potential for upset conditions to result in significant impacts. Air quality/greenhouse gas emissions impacts have been analyzed relative to regulatory thresholds, which were established assuming other potential sources in the region; project-related impacts were found to be within those thresholds. In consideration of the above, potential impacts from project activities would not be cumulatively considerable.

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

This Initial Study has concluded that there would be No Impact or Less Than Significant Impacts associated with the wide-range of environmental impacts that was analyzed. These analyses considered direct and indirect impacts to humans and the environment. Project activities would be conducted in areas that are developed, and the ground surface in outdoor areas would be returned to pre-cleanup conditions after the cleanup actions are complete; the only change would be the removal of contaminated materials from the site. Project control would be employed to reduce potential impacts, as described in the RAP. In addition, project activities would be conducted in accordance with applicable local, state, and federal laws, many of which have been established specifically for protection of human health and the environment. Accordingly, there is no evidence before DTSC that the proposed project would have a substantial adverse effect on human beings, either directly or in-directly.

Determination of Appropriate Environmental Document:

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

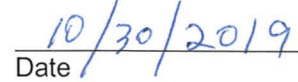
- ☒ The proposed project COULD NOT HAVE a significant effect on the environment. A **Negative Declaration** will be prepared.
- ☐ The proposed project COULD HAVE a significant effect on the environment. However, there will not be a significant effect in this case because revisions in the project have 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



Date

Allan Fone

Preparer's Name

Project Manager

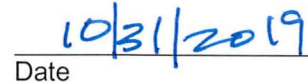
Preparer's Title

510-540-3836

Phone #



Branch Chief's Signature



Date

Julie Pettijohn

Branch Chief's Name

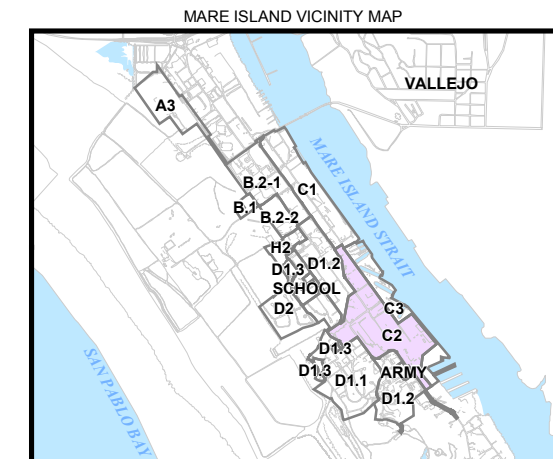
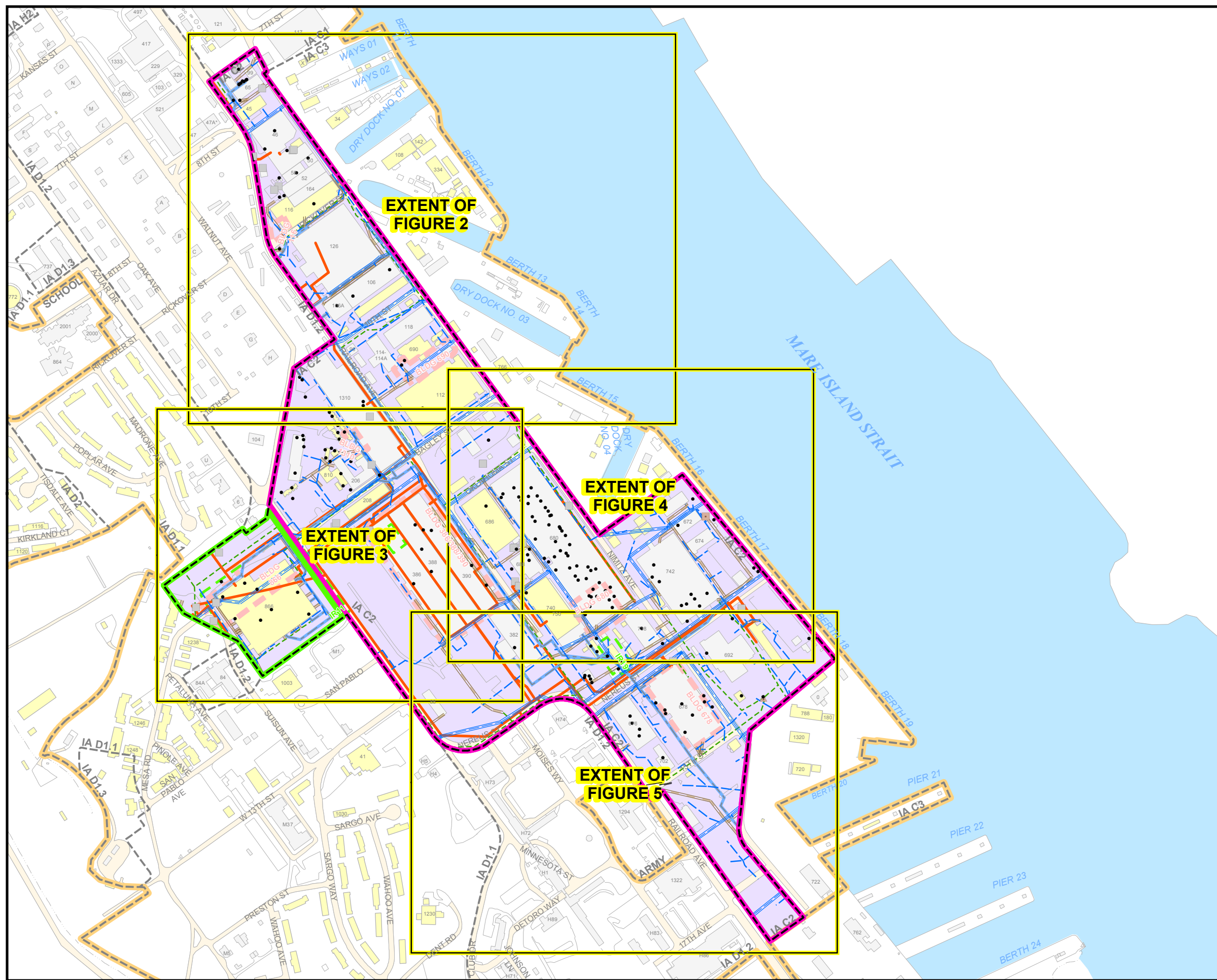
Branch Chief, Site Mitigation and
Restoration Program

Branch Chief's Title

510-540-3843

Phone #

FIGURES



- LEGEND**
- PCB SITE
 - SHIP TO SHORE PUMP STATION
 - ▲ TRUNK SYSTEM DOMESTIC PUMP STATION
 - PUMP STATION
 - UNDERGROUND STORAGE TANK
 - INVESTIGATION AREA
 - INDUSTRIAL WASTEWATER PIPELINE (IR14)
 - FUEL-OIL PIPELINE
 - BACKBONE SEWER PIPELINE
 - SEWER SERVICE LINE
 - STORMWATER BACKBONE
 - STORMWATER SERVICE LINE
 - EARLY TRANSFER PARCEL
 - GROUP I SITE
 - GROUP II, III SITE
 - STRUCTURE
 - FORMER STRUCTURE
 - ROAD
 - PROPOSED RESIDENTIAL LAND USE AREA
 - PROPOSED COMMERCIAL/INDUSTRIAL AREA
 - INVESTIGATION AREA - C2
 - WATER

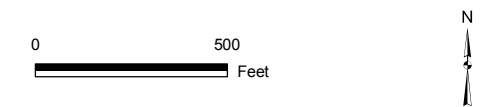
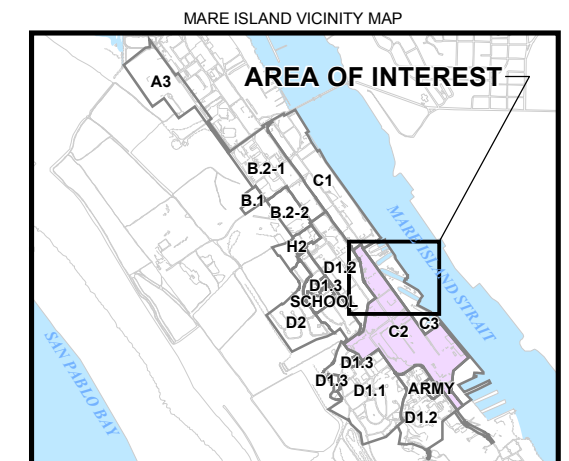
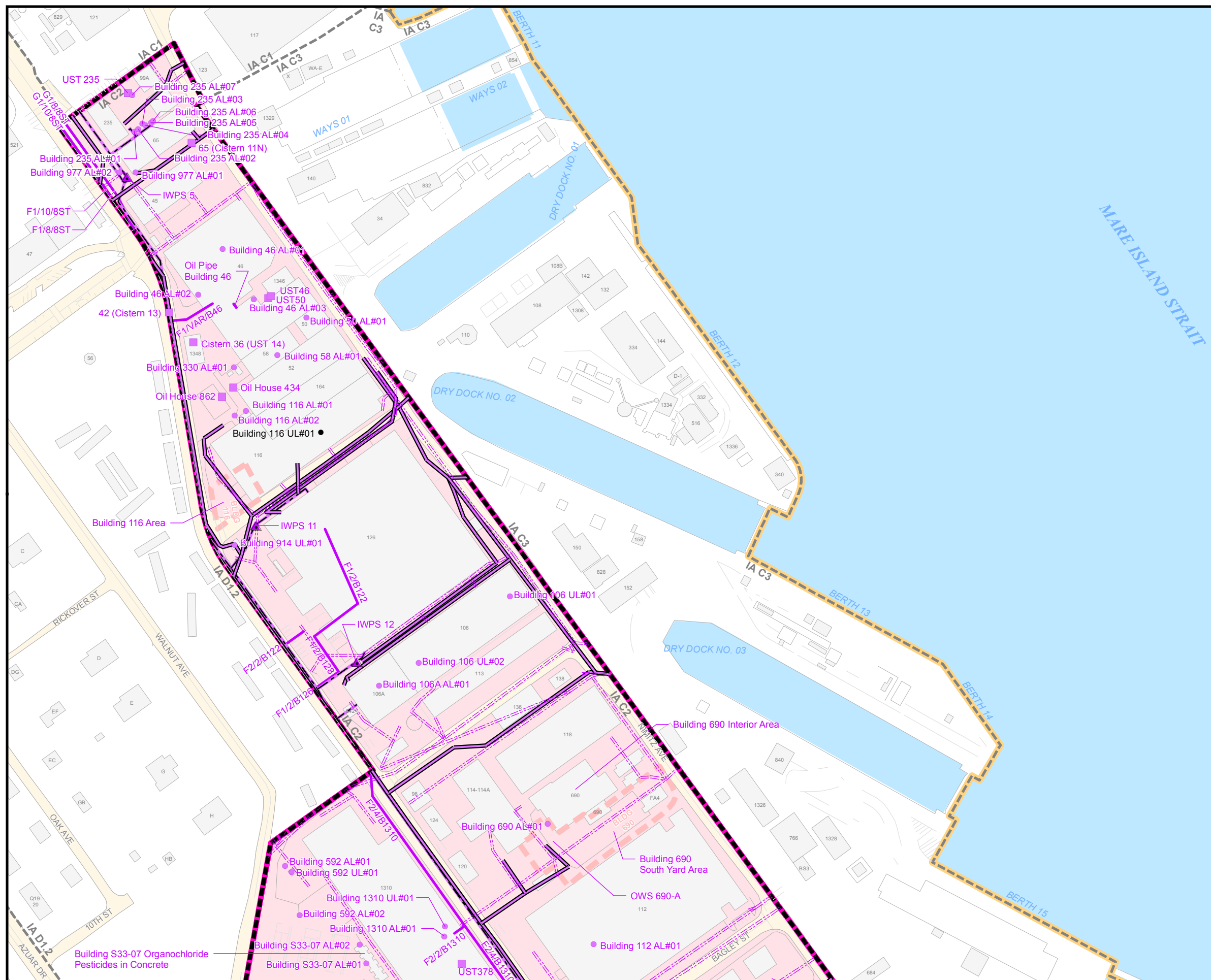


FIGURE 1
INVESTIGATION AREA C2
 CALIFORNIA ENVIRONMENTAL QUALITY ACT
 INITIAL STUDY
 LENNAR MARE ISLAND, VALLEJO, CALIFORNIA





AREA OF INTEREST

LEGEND

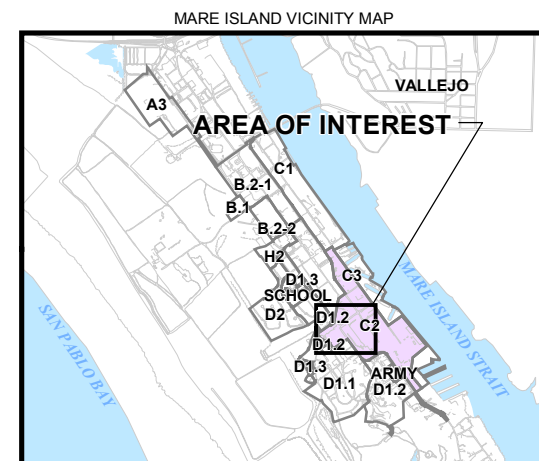
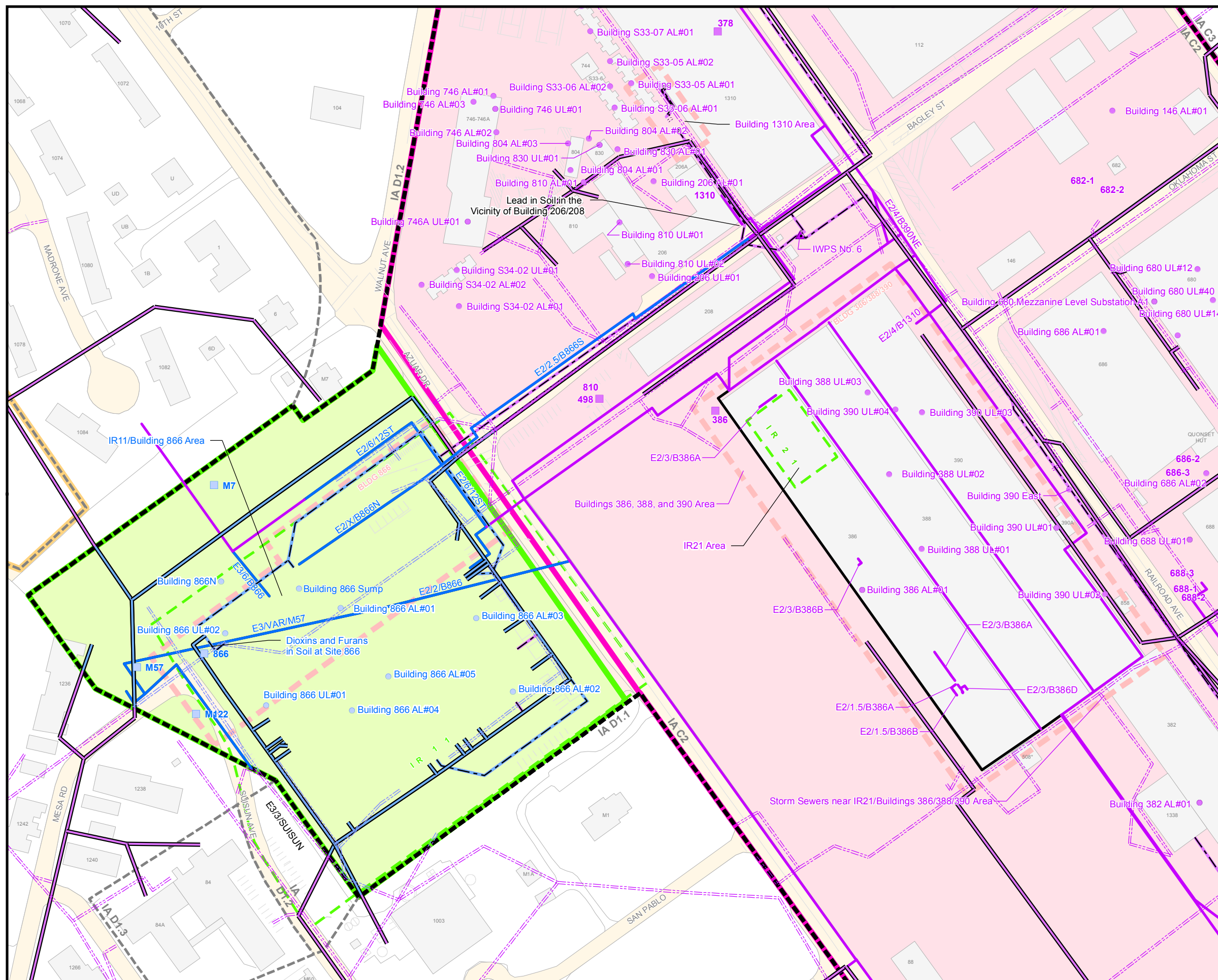
NOTES:

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Feet



FIGURE 2
ENVIRONMENTAL SITES IN THE
NORTHERN PORTION OF
INVESTIGATION AREA C2
CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA





- LEGEND**
- PCB SITE
 - UNDERGROUND STORAGE TANK
 - ▲ INDUSTRIAL WASTEWATER PUMP STATION
 - FUEL-OIL PIPELINE SEGMENT
 - - - INDUSTRIAL WASTEWATER PIPELINE (IR14)
 - SEWER PIPELINE
 - === STORMWATER PIPELINE
 - - - INVESTIGATION AREA
 - INVESTIGATION AREA C2
 - PROPOSED COMMERCIAL/INDUSTRIAL AREA
 - PROPOSED RESIDENTIAL LAND USE AREA
 - EARLY TRANSFER PARCEL
 - GROUP I SITE
 - GROUP II, III SITE
 - ROAD
 - STRUCTURE
 - WATER

- NOTES:**
1. SITE WITH A PROPOSED REMEDY OF NO ACTION ARE LABELED IN **BLUE**
 2. SITES WITH A PREFERRED REMEDY OF INSTITUTIONAL CONTROLS OR A REMEDY ASSESSED UNDER SEPARATE CEQA EVALUATIONS ARE LABELED IN **PURPLE**
 3. SITES WITH A PROPOSED REMEDY COVERED IN THIS INITIAL STUDY ARE LABELED IN **BLACK**

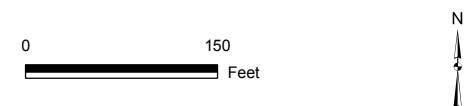
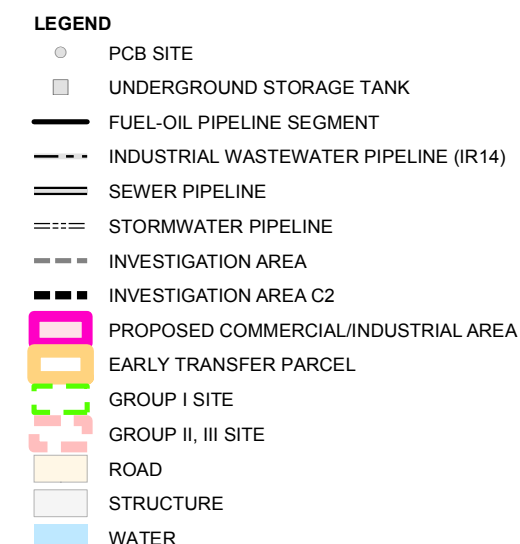
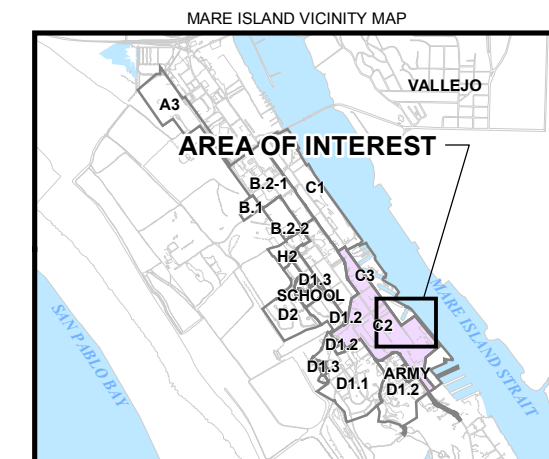
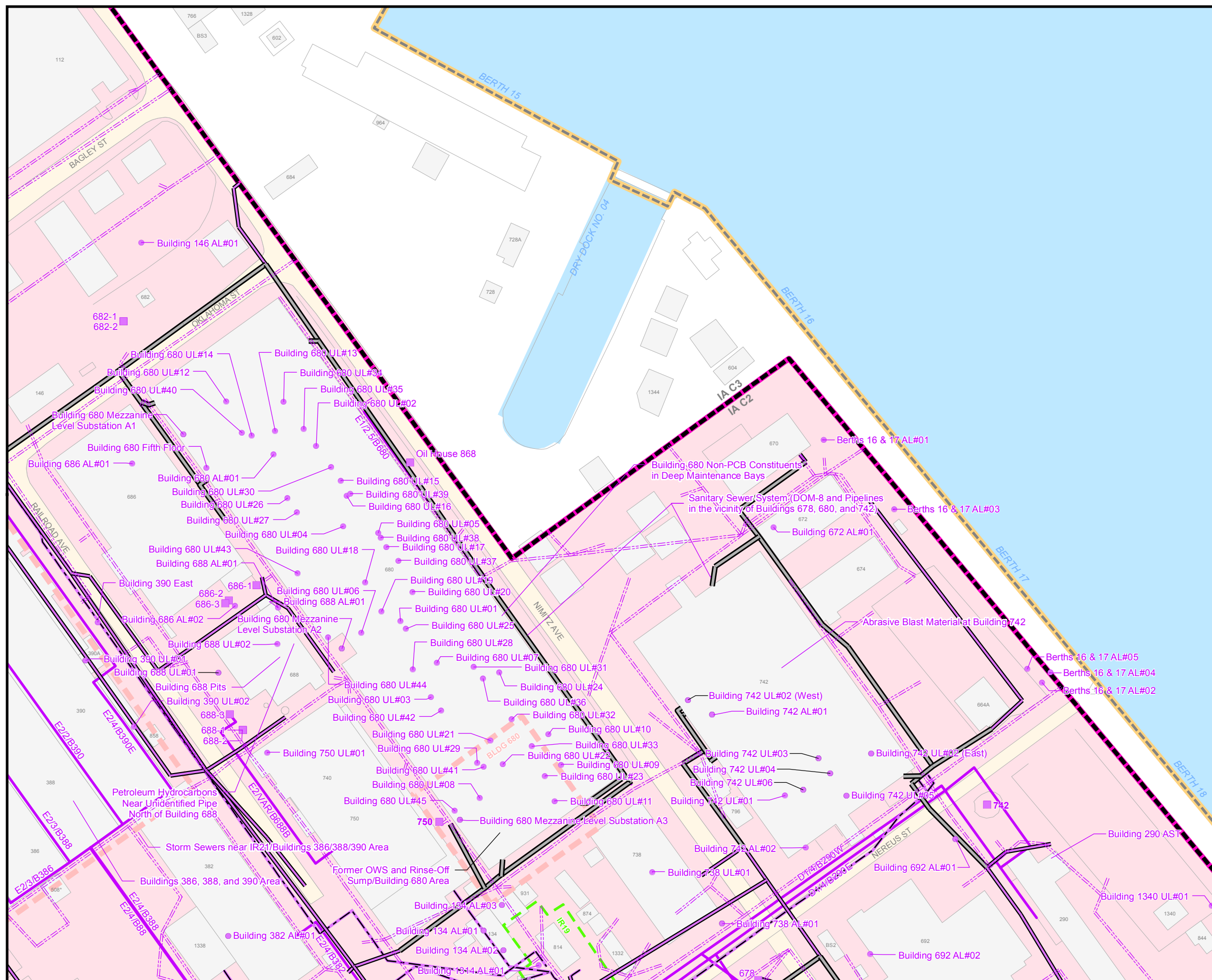


FIGURE 3
ENVIRONMENTAL SITES IN THE
WESTERN PORTION OF
INVESTIGATION AREA C2
CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA





NOTES:

1. SITES WITH A PREFERRED REMEDY OF INSTITUTIONAL CONTROLS OR A REMEDY ASSESSED UNDER SEPARATE CEQA EVALUATIONS ARE LABELED IN **PURPLE**
2. SITES WITH A PROPOSED REMEDY COVERED BY THIS INITIAL STUDY ARE LABELED IN **BLACK**

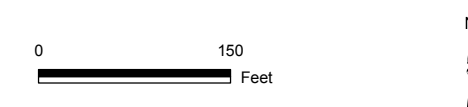
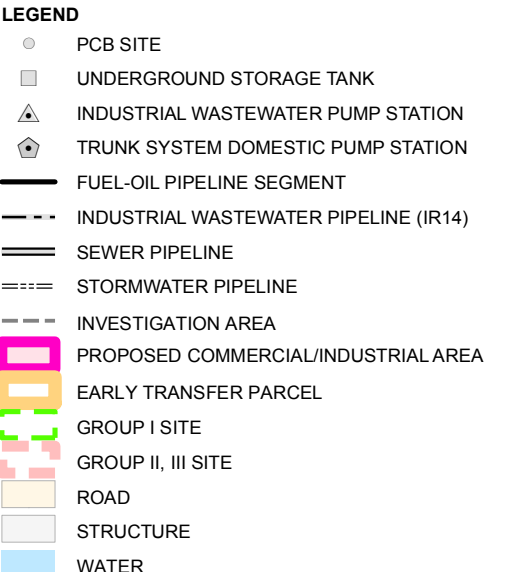
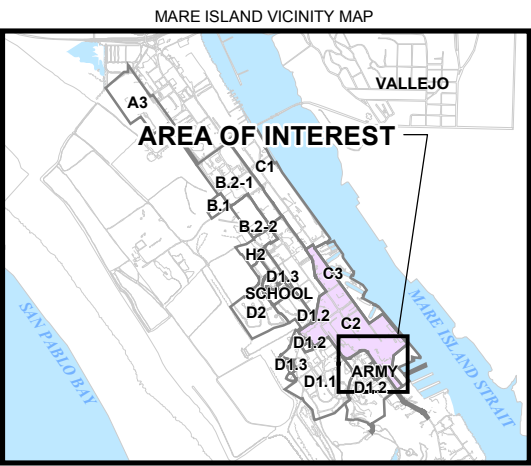
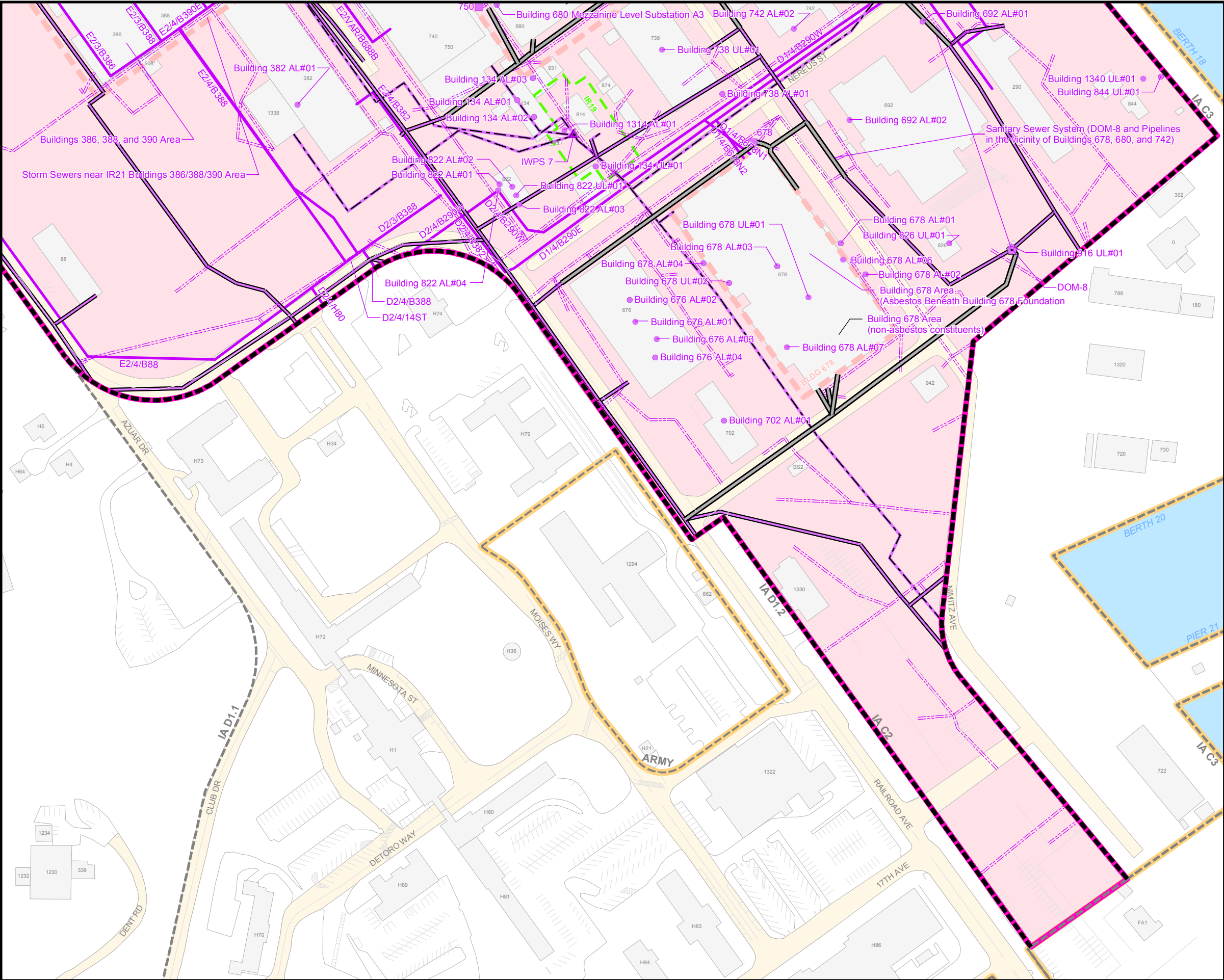


FIGURE 4
ENVIRONMENTAL SITES IN THE
EASTERN PORTION OF
INVESTIGATION AREA C2
CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA



NOTES:

- SSITES WITH A PREFERRED REMEDY OF INSTITUTIONAL CONTROLS OR A REMEDY ASSESSED UNDER SEPARATE CEQA EVALUATIONS ARE LABELED IN **PURPLE**
- SITES WITH A PROPOSED REMEDY COVERED BY THIS INITIAL STUDY ARE LABELED IN **BLACK**

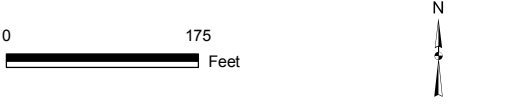


FIGURE 5
ENVIRONMENTAL SITES IN THE SOUTHERN PORTION OF INVESTIGATION AREA C2
CALIFORNIA ENVIRONMENTAL QUALITY ACT
INITIAL STUDY
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA

ATTACHMENT A

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ATTACHMENT B

**CALIFORNIA ENVIRONMENTAL EMISSIONS MODEL (CalEEMod)
RESULTS**

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

LMI IA C2
San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Manufacturing	63.55	1000sqft	1.46	63,550.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	64
Climate Zone	4			Operational Year	2019
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

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

Project Characteristics - operational year set as 2019.

Land Use - Input 63,550 square feet for land use.

Construction Phase - There is only site prep (1 week) and grading (3 months - 61 days) for this project. 3 months to complete.

Grading - Input amount of excavation material of 8,100 cubic yards.

Off-road Equipment - No changes for off-road equipment.

Off-road Equipment - No changes for off-road equipment.

Trips and VMT - Assuming 1,000 hauling trips for soil (500 export / 500 import), 100 hauling trips for asphalt, and conservative trip length of 100 miles.

On-road Fugitive Dust - No changes to on-road fugitive dust

Vehicle Trips -

Fleet Mix -

Demolition -

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Parking	250	0
tblAreaCoating	Area_Nonresidential_Exterior	31775	0
tblAreaCoating	Area_Nonresidential_Interior	95325	0
tblConstructionPhase	NumDays	4.00	61.00
tblConstructionPhase	NumDays	2.00	6.00
tblGrading	AcresOfGrading	22.88	0.00
tblGrading	AcresOfGrading	3.00	0.00
tblGrading	MaterialExported	0.00	8,100.00
tblGrading	MaterialImported	0.00	8,100.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	1.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripNumber	2,025.00	1,100.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	13.00	10.00

2.0 Emissions Summary

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

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	0.0675	1.1177	0.4688	2.5800e-003	0.0886	0.0273	0.1159	0.0349	0.0258	0.0607	0.0000	244.6658	244.6658	0.0196	0.0000	245.1553
Maximum	0.0675	1.1177	0.4688	2.5800e-003	0.0886	0.0273	0.1159	0.0349	0.0258	0.0607	0.0000	244.6658	244.6658	0.0196	0.0000	245.1553

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	0.0675	1.1177	0.4688	2.5800e-003	0.0886	0.0273	0.1159	0.0349	0.0258	0.0607	0.0000	244.6658	244.6658	0.0196	0.0000	245.1552
Maximum	0.0675	1.1177	0.4688	2.5800e-003	0.0886	0.0273	0.1159	0.0349	0.0258	0.0607	0.0000	244.6658	244.6658	0.0196	0.0000	245.1552

[illegible]

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
3	3-4-2019	6-3-2019	0.7960	0.7960
4	6-4-2019	9-3-2019	0.3594	0.3594
		Highest	0.7960	0.7960

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	0.2483	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003
Energy	9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	242.1678	242.1678	8.6200e-003	3.0700e-003	243.2978
Mobile	0.0673	0.3363	0.8242	2.5900e-003	0.2093	3.3000e-003	0.2126	0.0562	3.1200e-003	0.0593	0.0000	237.1515	237.1515	9.3700e-003	0.0000	237.3858
Waste						0.0000	0.0000		0.0000	0.0000	15.9957	0.0000	15.9957	0.9453	0.0000	39.6286
Water						0.0000	0.0000		0.0000	0.0000	4.6623	23.1332	27.7955	0.4799	0.0115	43.2274
Total	0.3246	0.4185	0.8938	3.0800e-003	0.2093	9.5500e-003	0.2189	0.0562	9.3700e-003	0.0656	20.6580	502.4537	523.1117	1.4432	0.0146	563.5409

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

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	0.2483	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003
Energy	9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	242.1678	242.1678	8.6200e-003	3.0700e-003	243.2978
Mobile	0.0673	0.3363	0.8242	2.5900e-003	0.2093	3.3000e-003	0.2126	0.0562	3.1200e-003	0.0593	0.0000	237.1515	237.1515	9.3700e-003	0.0000	237.3858
Waste						0.0000	0.0000		0.0000	0.0000	15.9957	0.0000	15.9957	0.9453	0.0000	39.6286
Water						0.0000	0.0000		0.0000	0.0000	4.6623	23.1332	27.7955	0.4799	0.0115	43.2274
Total	0.3246	0.4185	0.8938	3.0800e-003	0.2093	9.5500e-003	0.2189	0.0562	9.3700e-003	0.0656	20.6580	502.4537	523.1117	1.4432	0.0146	563.5409

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

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/8/2019	5	6	
2	Grading	Grading	4/8/2019	7/1/2019	5	61	

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 0****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	174	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	5.00	0.00	0.00	10.80	7.30	100.00	LD_Mix	HDT_Mix	HHDT
Grading	5	10.00	0.00	1,100.00	10.80	7.30	100.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

3.2 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					0.0158	0.0000	0.0158	8.6900e-003	0.0000	8.6900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0614	0.0320	5.0000e-005		3.2800e-003	3.2800e-003		3.0200e-003	3.0200e-003	0.0000	4.5249	4.5249	1.4300e-003	0.0000	4.5607
Total	5.9700e-003	0.0614	0.0320	5.0000e-005	0.0158	3.2800e-003	0.0191	8.6900e-003	3.0200e-003	0.0117	0.0000	4.5249	4.5249	1.4300e-003	0.0000	4.5607

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	5.0000e-005	4.0000e-005	4.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1072	0.1072	0.0000	0.0000	0.1073
Total	5.0000e-005	4.0000e-005	4.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1072	0.1072	0.0000	0.0000	0.1073

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

3.2 Site Preparation - 2019**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					0.0158	0.0000	0.0158	8.6900e-003	0.0000	8.6900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9700e-003	0.0614	0.0320	5.0000e-005		3.2800e-003	3.2800e-003		3.0200e-003	3.0200e-003	0.0000	4.5249	4.5249	1.4300e-003	0.0000	4.5607
Total	5.9700e-003	0.0614	0.0320	5.0000e-005	0.0158	3.2800e-003	0.0191	8.6900e-003	3.0200e-003	0.0117	0.0000	4.5249	4.5249	1.4300e-003	0.0000	4.5607

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	5.0000e-005	4.0000e-005	4.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1072	0.1072	0.0000	0.0000	0.1073
Total	5.0000e-005	4.0000e-005	4.1000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1072	0.1072	0.0000	0.0000	0.1073

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

3.3 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					0.0239	0.0000	0.0239	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0398	0.4090	0.2928	5.2000e-004		0.0209	0.0209		0.0198	0.0198	0.0000	45.8608	45.8608	0.0105	0.0000	46.1227
Total	0.0398	0.4090	0.2928	5.2000e-004	0.0239	0.0209	0.0448	0.0128	0.0198	0.0326	0.0000	45.8608	45.8608	0.0105	0.0000	46.1227

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	0.0206	0.6464	0.1352	1.9800e-003	0.0464	3.1000e-003	0.0495	0.0128	2.9600e-003	0.0157	0.0000	191.9928	191.9928	7.6100e-003	0.0000	192.1831
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	1.1100e-003	8.2000e-004	8.3500e-003	2.0000e-005	2.4100e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1801	2.1801	6.0000e-005	0.0000	2.1815
Total	0.0217	0.6472	0.1436	2.0000e-003	0.0488	3.1200e-003	0.0519	0.0134	2.9800e-003	0.0164	0.0000	194.1729	194.1729	7.6700e-003	0.0000	194.3646

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

3.3 Grading - 2019**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					0.0239	0.0000	0.0239	0.0128	0.0000	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0398	0.4090	0.2928	5.2000e-004		0.0209	0.0209		0.0198	0.0198	0.0000	45.8608	45.8608	0.0105	0.0000	46.1227
Total	0.0398	0.4090	0.2928	5.2000e-004	0.0239	0.0209	0.0448	0.0128	0.0198	0.0326	0.0000	45.8608	45.8608	0.0105	0.0000	46.1227

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	0.0206	0.6464	0.1352	1.9800e-003	0.0464	3.1000e-003	0.0495	0.0128	2.9600e-003	0.0157	0.0000	191.9928	191.9928	7.6100e-003	0.0000	192.1831
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	1.1100e-003	8.2000e-004	8.3500e-003	2.0000e-005	2.4100e-003	2.0000e-005	2.4300e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1801	2.1801	6.0000e-005	0.0000	2.1815
Total	0.0217	0.6472	0.1436	2.0000e-003	0.0488	3.1200e-003	0.0519	0.0134	2.9800e-003	0.0164	0.0000	194.1729	194.1729	7.6700e-003	0.0000	194.3646

4.0 Operational Detail - Mobile

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0673	0.3363	0.8242	2.5900e-003	0.2093	3.3000e-003	0.2126	0.0562	3.1200e-003	0.0593	0.0000	237.1515	237.1515	9.3700e-003	0.0000	237.3858
Unmitigated	0.0673	0.3363	0.8242	2.5900e-003	0.2093	3.3000e-003	0.2126	0.0562	3.1200e-003	0.0593	0.0000	237.1515	237.1515	9.3700e-003	0.0000	237.3858

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Manufacturing	242.76	94.69	39.40	562,171	562,171
Total	242.76	94.69	39.40	562,171	562,171

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Manufacturing	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Manufacturing	0.570523	0.041853	0.194077	0.115893	0.018544	0.005373	0.016909	0.024079	0.002502	0.002562	0.005975	0.000872	0.000837

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

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	152.7061	152.7061	6.9000e-003	1.4300e-003	153.3045
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	152.7061	152.7061	6.9000e-003	1.4300e-003	153.3045
NaturalGas Mitigated	9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.4617	89.4617	1.7100e-003	1.6400e-003	89.9933
NaturalGas Unmitigated	9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.4617	89.4617	1.7100e-003	1.6400e-003	89.9933

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

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					
Manufacturing	1.67645e+006	9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.4617	89.4617	1.7100e-003	1.6400e-003	89.9933
Total		9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.4617	89.4617	1.7100e-003	1.6400e-003	89.9933

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					
Manufacturing	1.67645e+006	9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.4617	89.4617	1.7100e-003	1.6400e-003	89.9933
Total		9.0400e-003	0.0822	0.0690	4.9000e-004		6.2500e-003	6.2500e-003		6.2500e-003	6.2500e-003	0.0000	89.4617	89.4617	1.7100e-003	1.6400e-003	89.9933

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	524923	152.7061	6.9000e-003	1.4300e-003	153.3045
Total		152.7061	6.9000e-003	1.4300e-003	153.3045

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Manufacturing	524923	152.7061	6.9000e-003	1.4300e-003	153.3045
Total		152.7061	6.9000e-003	1.4300e-003	153.3045

6.0 Area Detail**6.1 Mitigation Measures Area**

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2483	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003
Unmitigated	0.2483	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2482					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003
Total	0.2483	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2482					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.0000e-005	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003
Total	0.2483	1.0000e-005	5.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.1400e-003	1.1400e-003	0.0000	0.0000	1.2100e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	27.7955	0.4799	0.0115	43.2274
Unmitigated	27.7955	0.4799	0.0115	43.2274

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	14.6959 / 0	27.7955	0.4799	0.0115	43.2274
Total		27.7955	0.4799	0.0115	43.2274

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Manufacturing	14.6959 / 0	27.7955	0.4799	0.0115	43.2274
Total		27.7955	0.4799	0.0115	43.2274

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	15.9957	0.9453	0.0000	39.6286
Unmitigated	15.9957	0.9453	0.0000	39.6286

LMI IA C2 - San Francisco Bay Area Air Basin, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	78.8	15.9957	0.9453	0.0000	39.6286
Total		15.9957	0.9453	0.0000	39.6286

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Manufacturing	78.8	15.9957	0.9453	0.0000	39.6286
Total		15.9957	0.9453	0.0000	39.6286

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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LMI IA C2 - San Francisco Bay Area Air Basin, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

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

User Defined Equipment

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

11.0 Vegetation

EMFAC2014 (v1.0.7) Emission Rates

Region Type: Air Basin

Region: San Francisco Bay Area

Calendar Year: 2017

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOx_RUNEX	CO2_RUNEX	PM10_RUNEX	PM10_PMTW	PM10_PMBW	PM2_5_RUNEX	PM2_5_PMTW	PM2_5_PMBW	Sox_RUNEX
San Francisco Bay Area	2017	All Other Buses	Aggregated	Aggregated	DSL	2395.956584	162403.2319	0	0.144921951	0.16498261	0.411853884	4.647190972	1238.727831	0.040667959	0.012000003	0.130340037	0.038908681	0.003000001	0.055860016	0.011818043
San Francisco Bay Area	2017	LDA	Aggregated	Aggregated	GAS	2589597.187	92291497.62	16249222.03	0.020627421	0.028897748	0.88207051	0.086583676	304.2975854	0.00173145	0.008000002	0.036750011	0.001593313	0.002000001	0.015750005	0.003052108
San Francisco Bay Area	2017	LDA	Aggregated	Aggregated	DSL	24432.78289	925361.4142	149582.586	0.032993252	0.037560624	0.31748167	0.219192654	296.4303311	0.020869877	0.008000002	0.036750011	0.019967055	0.002000001	0.015750005	0.002829908
San Francisco Bay Area	2017	LDA	Aggregated	Aggregated	ELEC	17456.68822	878386.2537	113526.1121	0	0	0	0	0	0	0.008000002	0.036750011	0	0.002000001	0.015750005	0
San Francisco Bay Area	2017	LDT1	Aggregated	Aggregated	GAS	224727.3912	7359999.966	1366702.819	0.053690668	0.072841302	1.946149296	0.200934678	353.9738127	0.00290235	0.008000002	0.036750011	0.002674676	0.002000001	0.015750005	0.003565944
San Francisco Bay Area	2017	LDT1	Aggregated	Aggregated	DSL	326.491189	6748.493767	1597.583496	0.189016092	0.215182254	1.148029595	1.159429599	385.6261044	0.147993554	0.008000002	0.036750011	0.141591419	0.002000001	0.015750005	0.003681426
San Francisco Bay Area	2017	LDT1	Aggregated	Aggregated	ELEC	189.8780375	5850.287485	1152.964798	0	0	0	0	0	0	0.008000002	0.036750011	0	0.002000001	0.015750005	0
San Francisco Bay Area	2017	LDT2	Aggregated	Aggregated	GAS	867933.434	32323635.56	5466470.864	0.024268538	0.034287011	1.069921033	0.133724309	406.6132787	0.001613978	0.008000002	0.036750011	0.001485224	0.002000001	0.015750005	0.004076503
San Francisco Bay Area	2017	LDT2	Aggregated	Aggregated	DSL	1207.52118	53947.0134	7764.402549	0.01724996	0.019637932	0.139029042	0.065820975	369.995672	0.006754365	0.008000002	0.036750011	0.006462174	0.002000001	0.015750005	0.003532208
San Francisco Bay Area	2017	LHD1	Aggregated	Aggregated	GAS	59760.77865	1876092.228	890346.5584	0.117472655	0.169235127	2.190579801	0.491413183	852.8339528	0.00293008	0.008000002	0.076440022	0.002696209	0.002000001	0.032760009	0.008552097
San Francisco Bay Area	2017	LHD1	Aggregated	Aggregated	DSL	41701.94529	1515635.449	524558.0108	0.209144749	0.238097392	0.948981556	3.781209393	589.4006084	0.04019706	0.012000003	0.076440022	0.038458153	0.003000001	0.032760009	0.005626783
San Francisco Bay Area	2017	LHD2	Aggregated	Aggregated	GAS	8666.881453	317533.4278	129123.62	0.071038066	0.103065815	1.300484666	0.362784824	953.400682	0.002263531	0.008000002	0.089180026	0.002081807	0.002000001	0.038220011	0.009540032
San Francisco Bay Area	2017	LHD2	Aggregated	Aggregated	DSL	14157.05213	578155.39	178077.9063	0.172844103	0.19677152	0.749780576	2.494978606	657.4091339	0.029868296	0.012000003	0.089180026	0.028576207	0.003000001	0.038220011	0.006276035
San Francisco Bay Area	2017	MCY	Aggregated	Aggregated	GAS	127239.7743	1005813.936	254454.1006	2.503253456	3.021701673	22.83858884	1.189501617	169.8771316	0.001872963	0.004000001	0.011760003	0.001763609	0.001	0.005040001	0.002142822
San Francisco Bay Area	2017	MDV	Aggregated	Aggregated	GAS	580103.5157	19463866.97	3614846.007	0.048187771	0.06691216	1.756501889	0.242064862	531.769755	0.00179851	0.008000002	0.036750011	0.001656426	0.002000001	0.015750005	0.005337511
San Francisco Bay Area	2017	MDV	Aggregated	Aggregated	DSL	7192.128644	309845.8981	46132.58665	0.014374953	0.016364929	0.202302538	0.058816574	486.4994796	0.007026298	0.008000002	0.036750011	0.006722343	0.002000001	0.015750005	0.004644425
San Francisco Bay Area	2017	MH	Aggregated	Aggregated	GAS	14086.66232	118510.0591	1409.229699	0.293540148	0.383029296	8.171478498	0.924814155	1296.510573	0.003427162	0.012000003	0.130340037	0.003180268	0.003000001	0.055860016	0.013080875
San Francisco Bay Area	2017	MH	Aggregated	Aggregated	DSL	3317.47216	30511.97754	331.747216	0.143651831	0.163538059	0.544668359	5.911373418	1058.127362	0.155758711	0.016000005	0.130340037	0.149020658	0.004000001	0.055860016	0.010101539
San Francisco Bay Area	2017	Motor Coach	Aggregated	Aggregated	DSL	452.3422142	67127.36956	0	0.23673928	0.26950965	0.780849398	6.905794898	1772.579139	0.050215892	0.012000003	0.130340037	0.048043575	0.003000001	0.055860016	0.016911234
San Francisco Bay Area	2017	OBUS	Aggregated	Aggregated	GAS	2916.888201	173420.5008	58361.09912	0.08361613	0.120859073	1.959997162	0.544498077	1285.501482	0.00089206	0.012000003	0.130340037	0.000820956	0.003000001	0.055860016	0.012865849
San Francisco Bay Area	2017	PTO	Aggregated	Aggregated	DSL	0	68695.22621	0	0.550756882	0.626994786	1.970503128	9.737564942	2189.089105	0.135863308	0	0	0.129985922	0	0	0.020884933
San Francisco Bay Area	2017	SBUS	Aggregated	Aggregated	GAS	570.4608286	28443.73613	2281.843315	0.181781047	0.265254478	4.281748489	1.012370076	668.4854502	0.002066513	0.008000002	0.744800213	0.001900083	0.002000001	0.319200091	0.006747582
San Francisco Bay Area	2017	SBUS	Aggregated	Aggregated	DSL	3021.716023	115467.9176	0	0.192317194	0.218938486	0.510020826	8.541240502	1309.082565	0.077482253	0.012000003	0.744800213	0.074130405	0.003000001	0.319200091	0.01248926
San Francisco Bay Area	2017	T6 Ag	Aggregated	Aggregated	DSL	647.55652	11958.49739	0	1.105473289	1.25849719	2.599977665	10.00879406	1230.606257	0.546226909	0.012000003	0.130340037	0.522597375	0.003000001	0.055860016	0.011740559
San Francisco Bay Area	2017	T6 CAIRP heavy	Aggregated	Aggregated	DSL	70.13229292	3905.612605	0	0.085019284	0.096787983	0.297210249	2.49909925	1200.823365	0.020562613	0.012000003	0.130340037	0.019673083	0.003000001	0.055860016	0.011456416
San Francisco Bay Area	2017	T6 CAIRP small	Aggregated	Aggregated	DSL	187.33271	11989.26676	0	0.204910351	0.233274837	0.59585966	2.971044328	1210.655611	0.099358025	0.012000003	0.130340037	0.095059841	0.003000001	0.055860016	0.01155022
San Francisco Bay Area	2017	T6 instate construction heavy	Aggregated	Aggregated	DSL	981.8801491	63258.76299	0	0.191791058	0.21833952	0.518134448	5.00183992	1220.456005	0.071229794	0.012000003	0.130340037	0.068148425	0.003000001	0.055860016	0.011643721
San Francisco Bay Area	2017	T6 instate construction small	Aggregated	Aggregated	DSL	2927.42847	169937.7445	0	0.29701026	0.338123573	0.813511952	4.106909152	1215.81863	0.141767093	0.012000003	0.130340037	0.135634311	0.003000001	0.055860016	0.011599478
San Francisco Bay Area	2017	T6 instate heavy	Aggregated	Aggregated	DSL	11105.08444	594329.6709	0	0.108808285	0.12386995	0.343000395	3.240663635	1206.581366	0.026791835	0.012000003	0.130340037	0.025632832	0.003000001	0.055860016	0.01151135
San Francisco Bay Area	2017	T6 instate small	Aggregated																	

ATTACHMENT C

HISTORIC AND ARCHAEOLOGICAL RESOURCES

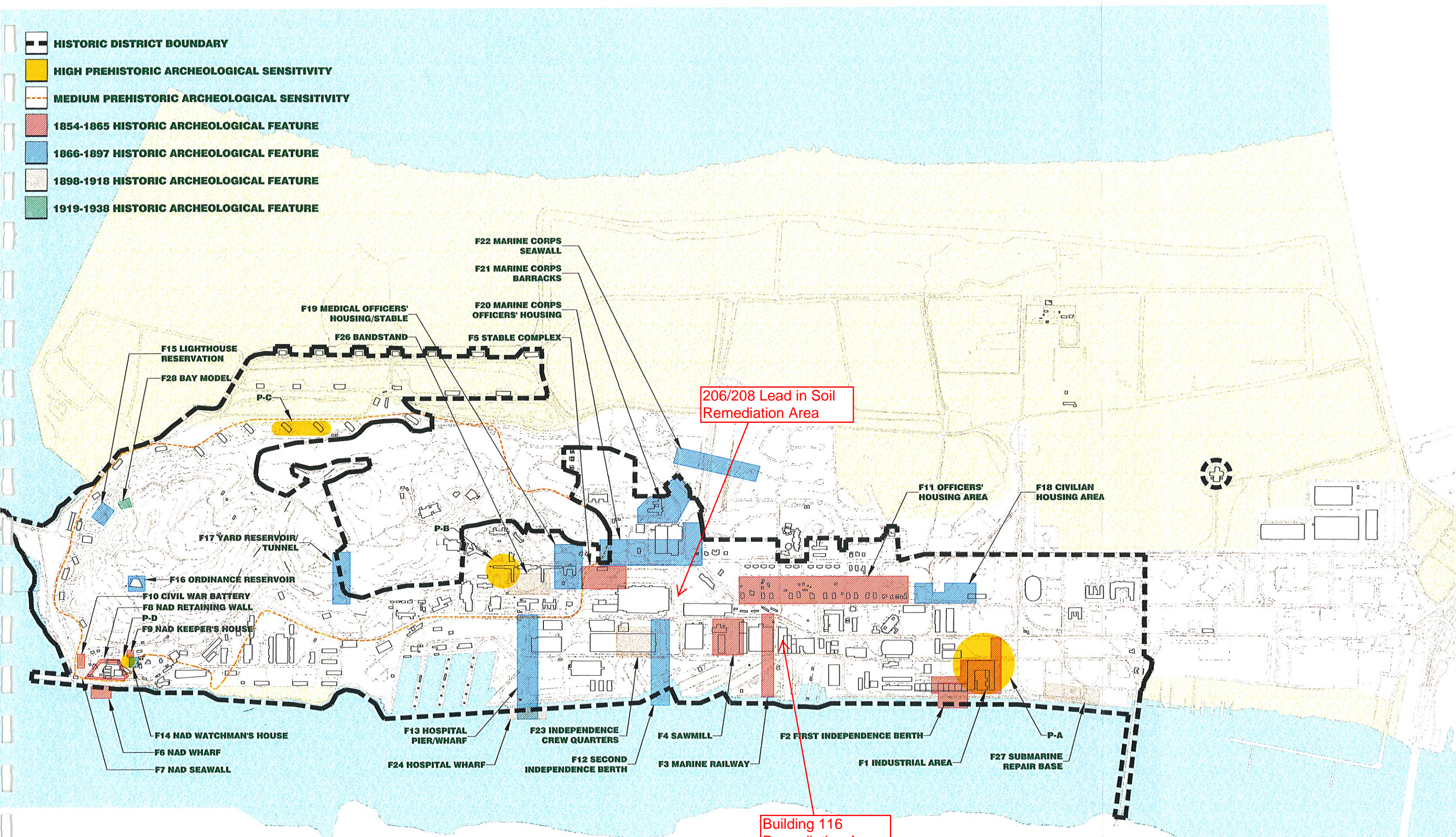


Figure 2.2
Archaeological Resources

Mare Island Specific Plan, 2002

0 400 800 1200 1600 2000 2400 2800 3200 3600

Figure replicated from Mare Island Archaeological Treatment Plan, prepared by PAR Environmental Services, Inc., dated November 2000; annotated to show the locations of the physical remediation work areas evaluated in the Initial Study

ATTACHMENT D
TRANSPORTATION

- BUS ROUTE AND POTENTIAL STOPS
- FERRY PIER
- POTENTIAL WATER TAXI DOCK

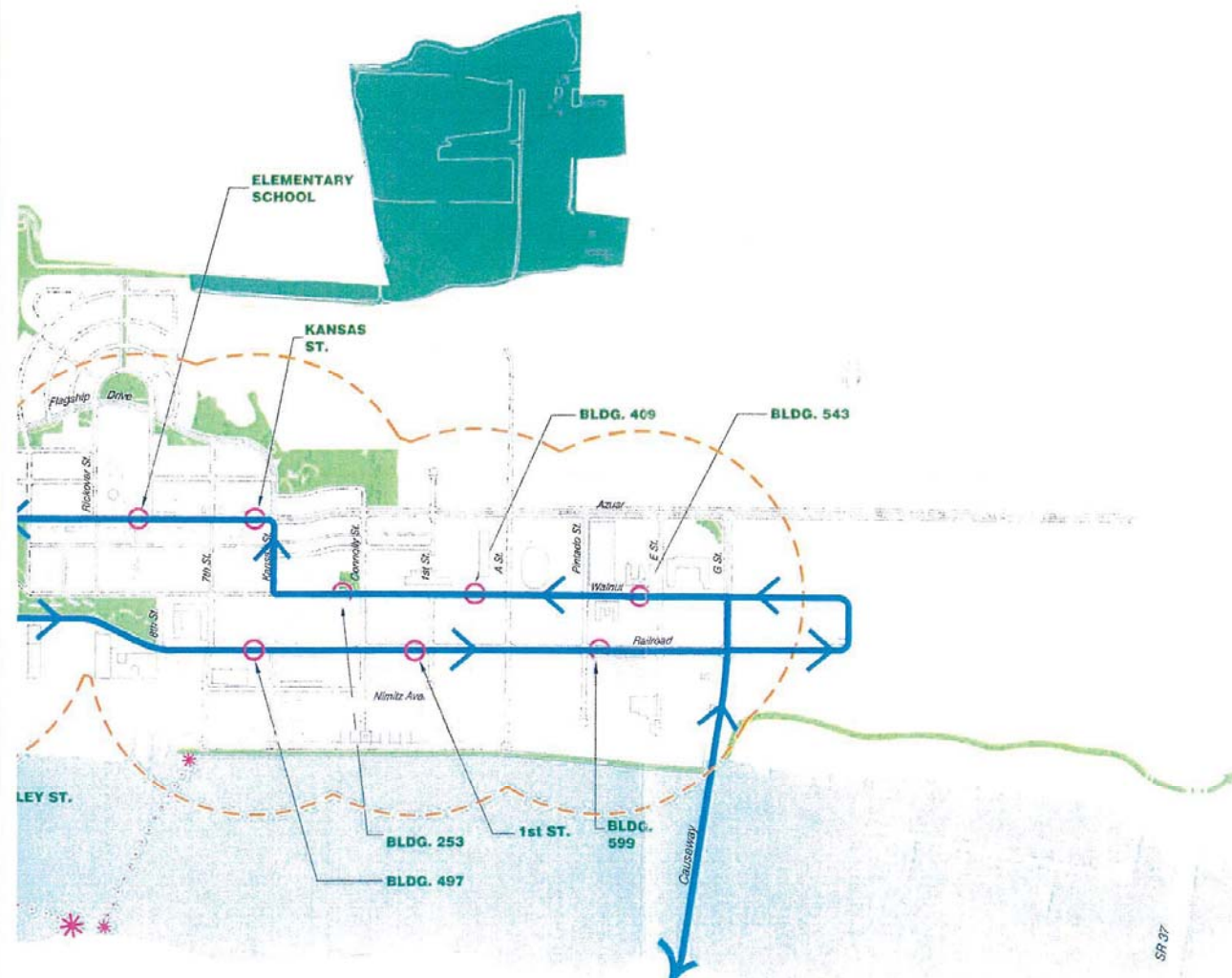
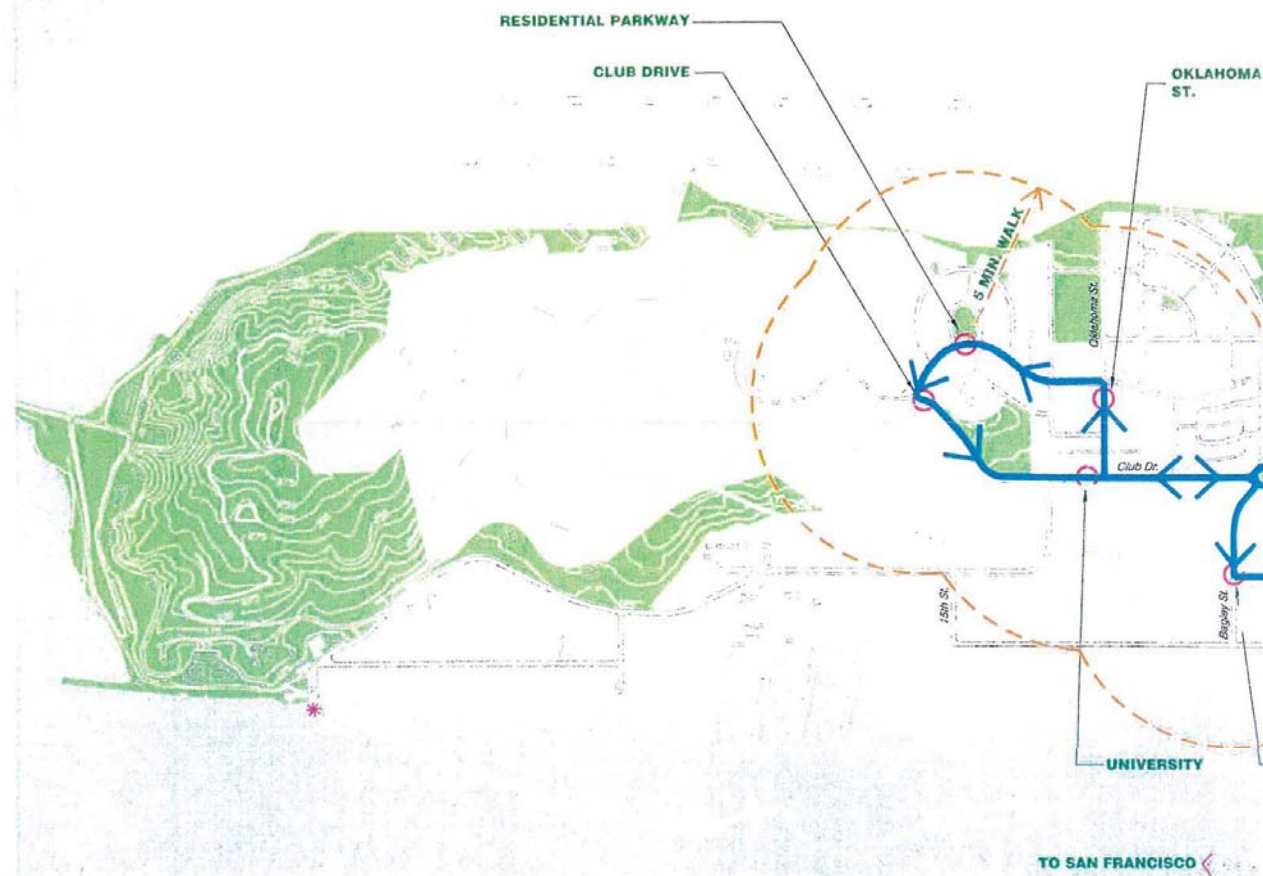


Figure 5.2
Transit Service

Mare Island Specific Plan 2005



SP 37

- CLASS I
- CLASS II
- CLASS III
- EXISTING PATH LOCATION TO REMAIN

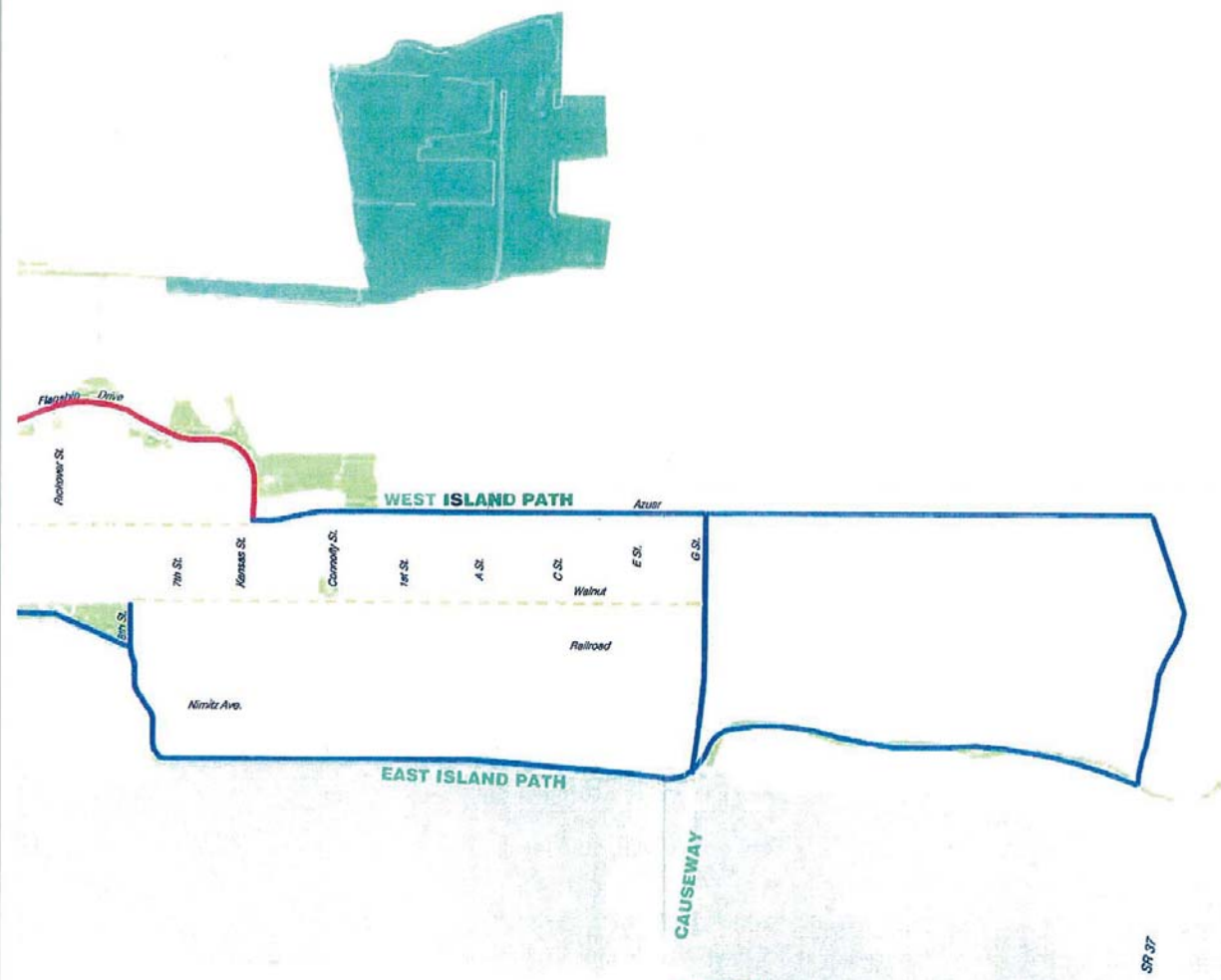
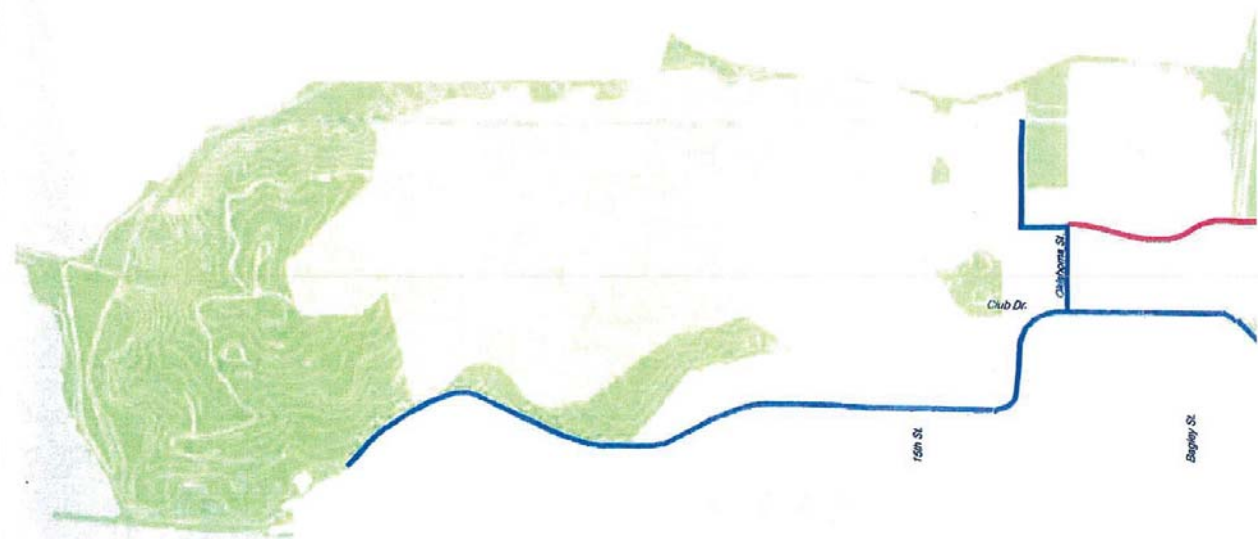











Figure 5.3
Bicycle and Pedestrian Routes
 Mare Island Specific Plan SPA III, Revised June 2008



MAP MTC-3 Circulation

-  Freeway
-  Principal Arterial/State Route
-  Two-Lane Divided Highway
-  Arterial
-  Collector
-  All other roads classified as Local Roads
-  Vallejo City Limit
-  Sphere of Influence (SOI)
-  Railroad

Note regarding Mare Island roadway system:

The Mare Island Specific Plan describes a system of boulevards, avenues, commercial streets, and residential streets. For the purposes of this baseline report, the key streets shown are identified as collectors and arterials.



Source: City of Vallejo 1999 General Plan; Solano County, 2014; Fehr & Peers, 2016; PlaceWorks, 2016.

