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: Feasibility Study/Remedial Action Work plan Mare Island Investigation Area C3 Triangle Area		CALSTARS CODING Site Code: 201383 Work Phase: PCA: 12065
PROJECT ADDRESS: Former Mare Island Naval Shipyard	CITY: Vallejo	COUNTY: Solano
PROJECT SPONSOR: Lennar Mare Island 690 Walnut Avenue, Suite 100 Vallejo, CA 94592	CONTACT: Mr. Neal Siler	PHONE: 707/557-8223

APPROVAL ACTION UNDER CONSIDERATION BY DTSC:

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

STATUTORY AUTHORITY:

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

DTSC PROGRAM/ ADDRESS: 700 Heinz Avenue Berkeley, CA 94710	CONTACT: Mr. Henry Chui	PHONE: 510/540-3759

PROJECT DESCRIPTION:

Preparation and approval of the Feasibility Study/Remedial Action Plan (FS/RAP) (CH2M HILL 2009) by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) is pursuant to the requirements of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 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 Chapter 6.8, Division 20, California Health & Safety Code. The FS/RAP proposes the remedial alternative for a portion of the former Mare Island Naval Shipyard, Vallejo, California containing black granular material (BGM) and BGM-impacted soil. The remediation area is referred to as the Investigation Area (IA) C3 Triangle Area, which consists of the area between Dry Dock Nos. 1 and 2 and Mare Island Strait (Figure 1), "the Site." This area is part of a larger parcel transferred from the United States Department of the Navy (Navy) to Lennar Mare Island (LMI), LLC. The FS/RAP is incorporated by reference.

Location:

The Site is 5.4 acres in size and consists of structures including Building 108; Installation Restoration Program Site 09 (IR09); and 12 (IR12) and paved area. The ground surface at the Site is approximately 8 feet above mean sea level. Refer to the attached figures: Figure1, Investigation Area C3, Triangle Area; Figure 2 Proposed Truck Route; and 3-1, Black Granular Material Observations and 2008 Soil Boring and Trench Locations in the Investigation Area C3 Triangle Area attached at the end of this document.

Background:

The Site was owned and operated by the Navy and initial site development occurred between 1872 and 1910. The Site was formerly used for industrial processes including vessel production, maintenance, storage, paint manufacturing, and office space to support the dry docks.

A field investigation was conducted in 2008 in response to the Department of Toxic Substances Control's (DTSC) comments on the Draft *Investigation Area C3 Implementation Report, Lennar Mare Island, Vallejo, California*. The planned future use of this portion of IA C3 is as a commercial/industrial area (SWA 2000). Future

use of IA C3 adjacent to Mare Island Straight is also subject to the California State Lands Commission agreement, with the City of Vallejo as trustee and LMI as lessee.

In the previous Final Investigation Area C3 RAP, excavation and offsite disposal of soil with concentrations of lead, polychlorinated biphenyls (PCBs), or total petroleum hydrocarbons (TPH) in the Building 108, IR09, and IR12 areas were performed. The RAP established remedial goals for lead in soil and concluded that no further action beyond recordation of the IA C3-wide land use covenant (LUC) was necessary. The LUC prohibits sensitive uses and is appropriate where remedial efforts have been completed to levels appropriate for commercial/ industrial land use. CH2M HILL removed 1,834 cubic yards of soil contaminated by TPH, lead, or PCBs from 17 excavation areas at the Site. Results from 168 final soil samples were used to verify that cleanup goals specified in the RAP had been achieved. In November 2007, DTSC provided comments on the IA C3 Implementation Report, stating that the remedial actions for the IA C3 were incomplete. DTSC stated that BGM was observed and left in place in several of the excavations and requested (1) a subsurface investigation to determine the extent of the BGM contamination and (2) a feasibility study to evaluate cleanup alternatives for the BGM. DTSC requested that the feasibility study include an alternative for removing the BGM to achieve the approved RAP cleanup goals. Additionally, DTSC requested a complete analysis of the BGM to determine the appropriate cleanup standards for potential constituents of concern. CH2M HILL performed a field investigation in July 2008. BGM was observed in six soil borings and five trenches at the Site, specifically: around building foundation files, possibly as structural fill (Excavation Area 4 and IR09GB0201); over brick rubble (IR12TR0201 and Excavation Area 13); below concrete pads (IR09GB0203); lenses underlying railroad subgrade (IR12GB0201); thin layers between dredge fill (IR09GB0201); lenses in cut and fill from the Panoche Formation. These observations suggest that BGM was placed during development of the Site, and while present in many locations, the Site is not evenly covered by the BGM. Also identified during this investigation, were various materials categorized as BGM such as smelter slag, blast furnace slag, foundry slag, or a mixture of these materials. Industrial processes related to these materials are known to have been performed at Mare Island during vessel production and maintenance.

Health Risk Discussion: Risk was calculated for the construction worker, future industrial worker, and future construction worker. According to the screening-level Human Health Risk Assessment (HHRA), the estimated cumulative excess lifetime cancer risk for BGM is within the USEPA risk-management range of one in ten thousand (10^{-4}) to one in one million (10^{-6}). The cumulative non-cancer hazard index is below the threshold of 1. However, lead concentrations in BGM samples collected from the surface soil interval (0 to 2 feet below ground surface [bgs]) and mixed-zone soil interval (0 to 10 feet bgs) in some locations at the Site are greater than the screening level of 800 milligrams per kilogram (mg/kg) for industrial soil and warrant remedial action.
The results of the 2004 HHRA and the 2008 screening-level HHRA described in this FS/RAP indicate that lead in soil (currently, understood to reflect levels in BGM) requires remedial action at the Site. The cleanup standards for the Site are an exposure point concentration (EPC; i.e., 95 percent Upper Confidence Limit (UCL) of the mean) of 800 mg/kg (i.e., the USEPA regional screening level) and a maximum concentration of 1,000 mg/kg. The EPC cleanup standard (800 mg/kg) is consistent with the average cleanup goal (750 mg/kg) in the RAP (CH2M HILL 2006) and applies to soil that is not beneath structures. Using the EPC cleanup standard conforms to the current DTSC recommendation of using the USEPA regional screening level as a risk-based level for lead under commercial/ industrial and construction worker scenarios (DTSC 2002). In areas where the exposure pathway from humans to the BGM and BGM-impacted soil is incomplete, this cleanup standard will not apply.

A remedial action is warranted based on investigations and human health risk assessments of the BGM and BGM-impacted soil in the IA C3 Triangle Area. The preferred remedial alternative involves encapsulation through repair of an existing paving system by placement of 2 to 6 inches of new asphalt over the entire Triangle Area (excluding structural footprints), recordation and implementation of institutional controls, and routine inspection and maintenance of the encapsulating surface and structures. The encapsulating surface would eliminate the primary exposure pathway at the Site, thereby reducing the potential risk of human health and ecological impacts to acceptable levels.

In addition, an area-wide land use covenant (LUC) will be recorded. This LUC will prohibit unrestricted land use and will restrict the Triangle Area to commercial and industrial uses. A site-specific LUC would prohibit excavation or other activities that might damage the encapsulation features without prior approval of DTSC.

Project activities include:

- Site preparation: Repair cracks and potholes in existing pavement.
- Encapsulation: Installing 2-6 inches of new paving to encapsulate the Site surface. Repairs will occur prior

to pavement installation.

- Site restoration: All future Site development would be limited to commercial/industrial use.

Other activities include:

- Implementation of traffic controls and other institutional controls (i.e., fences, caution marking); and recordation of a land use covenant (LUC). An IA C3-wide LUC prohibits the presences of residences, hospitals, daycare facilities for children, and public or private schools for persons under 18 years of age. A site-specific LUC will be implemented, preventing unauthorized disturbance of encapsulating surface and structures.

The estimated start date for the encapsulation is Summer 2009 and is expected to take approximately 4-6 weeks for completion.

References:

CH2M HILL. 2009. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January.

ENVIRONMENTAL IMPACT ANALYSIS:

1. Aesthetics

Project Activities Likely to Create an Impact:

- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader).

Description of Baseline Environmental Conditions:

The IA C3 Triangle Area is bounded by Dry Dock Nos. 1 and 2 and Mare Island Strait (Figure 1). The IA C3 Triangle Area is approximately 5.4 acres and consists of structures and paved areas. The ground surface at the Site is approximately 8 feet above mean sea level. Current land use is industrial, and the Site aesthetics are consistent with that of a heavy construction area.

Analysis as to whether or not project activities would:

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

Impact Analysis:

Trucks, trailers, portable tanks, and construction equipment will be present during encapsulation activities. Similar types of construction vehicles are typically visible within the Site and are not expected to visually affect the Site. Encapsulation is expected to take approximately 4 to 6 weeks and is not expected to have a long-term adverse 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 project Site is not within the corridor of a designated state scenic highway. An internet search of the California Department of Transportation's Landscape Architecture Program-California Scenic Highway website confirms that no officially designated scenic highways relative to the Project area exist. However, California State Highway 37 is situated approximately 3 miles from the Site and is on the list of Eligible State Scenic Highways.

Project activities will be conducted such that no damage to scenic resources occurs.

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:
All activities will occur within the boundaries of the Triangle Area. Construction equipment will be stored outside the building for short periods. The Site will be restored to its original condition such that the visual character will not be changed; therefore, no degradation of the existing visual character or quality of the Site will occur.

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

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

Impact Analysis:
Project activities will be implemented during daylight hours and do not involve the use of lighting, and new sources of lighting will not be constructed.

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

References:

1. CH2M HILL. F*easibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January 2009.
2. California Department of Transportation Landscape Architecture Program-California Scenic Highway Mapping System, April 2, 2009.
3. Google Maps, CA -37, Vallejo, CA to Mare Island Naval Island Shipyard.

2. Agricultural Resources

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions:
Past land use at the Triangle Area was for industrial purposes only. There is no historical or current agricultural use of the Site since the time the Site was owned and operated by the Navy. Initial Site development occurred between 1872 and 1910. The Triangle Area was formerly used for industrial uses including storage, paint manufacturing, and office space to support the dry docks. The proposed redevelopment plan for the Triangle Area is for commercial/ industrial use. These proposed land uses are similar to past uses. Initial Site development occurred between 1872 and 1910. Consequently, no further analysis of agricultural resources 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:
None. No past or designated agricultural use.

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:
No impact.

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

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

Impact Analysis:
No impact. There is no Farmland.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft, January 2009.

3. Air Quality

Project Activities Likely to Create an Impact:
- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader). Equipment emissions and dust production will create an impact.

Description of Baseline Environmental Conditions:
The proposed project is located within jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The BAAQMD is responsible for enforcing, within its jurisdiction, ambient air quality standards established by the California Air Resources Board (CARB) and the United States Environmental Protection Agency (USEPA), as well as BAAQMD regulations. These air quality standards contain averaging times and threshold concentration levels for certain criteria pollutants that cannot be exceeded by proposed projects (BAAQMD 2008a).

The BAAQMD falls within the San Francisco Bay Area Air Basin (SFBAAB). The CARB designated the SFBAAB as being in non-attainment with California Ambient Air Quality Standards for ozone and for particulate matter less than 2.5 microns ($PM_{2.5}$) and particulate matter less than 10 microns (PM_{10}). The USEPA has designated the SFBAAB as being in non-attainment with Federal Ambient Air Quality Standards for ozone (BAAQMD 2008a).

Since ozone, $PM_{2.5}$, and PM_{10} have been identified as non-attainment in the SFBAAB, specific standards were developed by the BAAQMD to control sources of these pollutants from proposed future projects. Further, because ozone is an identified non-attainment pollutant, standards are also required for ozone precursors such as nitrogen oxides (NO_x) and volatile organic compounds (VOCs). The BAAQMD established such standards for projects proposed within its jurisdiction. Regulation 6 of the BAAQMD regulations limits particulate matter by emission rate, while Regulation 8 limits the emissions of organic pollutants (carbon monoxide [CO] and VOCs). In addition, odorous substances are regulated by the BAAQMD under Regulation 7 (BAAQMD 2008b).

Analysis as to whether or not project activities would:

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

Impact Analysis:
The BAAQMD regulations specify standards for fugitive dust emissions and particulate matter emissions. Under Regulation 2-1-113.2.18, encapsulation activities do not need to be authorized through a permit from the Air Pollution Control Officer. However, these activities must comply with the applicable provisions of Regulations 6, 7, and 8. By complying with these requirements, encapsulation activities are not expected to be release a significant amount of criteria pollutants. During fieldwork, air monitoring will be conducted to confirm that there is no exposure of potentially hazardous particulates to Site workers and the public. A health and safety professional will first evaluate available data for known Site contaminants and select proper air monitoring equipment. The following air monitoring devices will be used during various phases of the Site remediation. Action levels for chemicals monitored will established in the Site Specific Health and Safety Plan (HSP) and will comply with the requirements of the BAAQMD. During active construction activities, between five (5) and 24 truck trips per day are anticipated. Total construction time is expected to take approximately four (4) to six (6) weeks.

PID: OVM with 10.6eV lamp or equivalent
CGI: MSA model 260 or 261 or equivalent
O_2Meter: MSA model 260 or 261 or equivalent
Dust Monitor: Miniram model PDM-3 or equivalent

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

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

Impact Analysis:
As stated in Part (a) above, the project activities are under the regulatory authority of the BAAQMD, and compliance with their standards related to NO_x, CO, VOCs, and particulate matter will not result in a violation.

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

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

Impact Analysis:
As described in the answers above, project activities will not create a violation of emissions standards, and emissions will be temporary and short term; therefore, there will be no cumulatively considerable net increase of any criteria pollutant or ozone precursor during project activities.

Emissions from construction activities, including emissions of ozone precursors, are part of the emission inventory that is the basis for the regional air quality plans. Emissions from the project are not expected to result in a net increase or impede the attainment or maintenance of ozone and NO_x standards in the Bay Area.

Particulate matter control measures recommended by BAAQMD will ensure that PM_{10} emissions will not result in a significant increase. The following construction control measures from the BAAQMD CEQA Guidelines, Table 2, "Feasible Control Measures for Construction Emissions of PM_{10}" will be included as required for the project:
-Water all active construction areas at least twice daily.
-Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
-Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
-Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
-Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

For areas greater than four acres in area the following measures will also be employed:
-All control measures listed above.
-Hydroseed or apply (non-Toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
-Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).
-Limit traffic speeds on unpaved roads to 15 miles per hour.
-Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
-Replant vegetation in disturbed areas as quickly as possible.
-The following measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors or which for any other reason may warrant additional emissions reductions.
-Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the Site.
-Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of the construction areas.
-Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour.
-Limit the area subject to excavation, grading, and other construction activity at any one time.

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. Agricultural crops, especially broad-leaved produce crops and cultivated flowers, are also sensitive to air pollutants. The sensitive receptors in the project vicinity are the recreational users of the golf course; boat traffic in Carquinez Strait, San Pablo Bay, and Mare Island Strait; occupants of the housing, commercial, and academic facilities on Mare Island, the City of Vallejo, and the San Francisco Bay area; and an elementary school located approximately 0.28 mile from the Triangle Area.

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

Project work is occurring in a commercial/ industrial developed area that is not in the vicinity of any sensitive receptors.

- Only a small number of construction vehicles or equipment will be operating at any time.
- The project is not expected to last more than six (6) weeks.
- Standard construction practices, such as using a water truck, will be used for dust suppression.
- Air monitoring will be conducted to ensure that action levels are not exceeded.

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:
Odorous substances are regulated by the BAAQMD under Regulation 7. Controls to meet these requirements will be implemented. However, in general, the air quality impact of odor from construction activities is difficult to assess, as the identification and degree of its objectionable nature is very subjective and varies from individual to individual. The encapsulation activities will occur within the Site boundary and will not affect a substantial number of people because it is a commercial/industrial zone. As mentioned, the SSHP for the Site will include air monitoring by use of direct-reading instruments at the source, in the workers' breathing zone, and at the Site perimeter during regulated activities. Perimeter monitoring is done to document that the surrounding community is not being adversely affected by the operations. Data will be shared with affected workers and recorded. In addition, dust suppression measures, including wetting exposed surfaces may be employed to help eliminate risk of exposure.

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

f. Result in human exposure to Naturally Occurring Asbestos (see also Geology and Soils, f.).

Impact Analysis:
As illustrated on the CARB map entitled "General Location Guide for Ultramafic Rocks in California Area More Likely to Contain Naturally Occurring Asbestos," (CARB 2000) no ultramafic rocks likely to contain naturally-occurring asbestos are present in the project area; therefore, encapsulation activities will not cause human exposure to naturally-occurring asbestos.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

2. CH2M HILL, electronic mail, March 19, 2009.

3. CH2M Hill, electronic mail, April 17, 2009.

4. Bay Area Air Quality Management District (BAAQMD) 2008a.

Web site: www.baaqmd.gov/pln/ambient_air_quality.htm. Accessed on January 6, 2009.

5. Bay Area Air Quality Management District (BAAQMD) 2008b.

Website: www.baaqmd.gov/dst/regulations/index.htm. Accessed on January 6, 2009.

6. Bay Area Air Quality Management District BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans, 1999, Web site www.baaqmd.gov/pln/ceqa_guide.pdf. Accessed on April 21, 2009.

4. Biological Resources

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions:
No viable habitat exists within the Triangle Area because the Site is covered by asphalt, concrete, and buildings. Site development began in the 1870's and continued into the twentieth century. The Site was used extensively for U.S. Navy ship repair and maintenance. As a result of the industrial development, the Site is void of habitat value.

A California Department of Fish and Game Diversity Database Rarefind search for the Mare Island and Benicia quadrants was reviewed. Some observed species such as Danaus plexippus (monarch butterfly) and Seneco aphanactis (chaparral ragwort) are presumed extant, while Cordylanthus mollis ssp. mollis (soft bird's-beak) and Fritillaria liliacea (fragrant fritillary) are presumed extirpated. Cordylanthus mollis ssp mollis is a federally-listed endangered species and a State-

listed rare species. Ardea herodias (Great Blue Herons) were observed on Mare Island in January 1996. Geothlypis trichas sinuosa (saltmarsh common yellowthroat) were last recorded in 1998 on Mare Island.

Analysis as to whether or not project activities would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact Analysis:
As mentioned in the Environmental Baseline above, the Site is paved and does not provide habitat for species.

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

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact Analysis:
Observation of many species listed on the Benicia and Mare Island quadrants relative to the project Site are believed to still exist in areas that provide suitable habitat although not see recorded since the mid to late 1990's.

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

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

Impact Analysis:
The baseline conditions for the Project Site are heavy industrialized. There are no federally protected wetlands at the Project Site.

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:
However, as mentioned, the project will occur in an industrialized area void of potential habitat.

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:

None. See explanation above.

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:
None. See explanation above.

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

References:

1. CH2M HILL. 2009. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January.

2. California Department of Fish and Game-*California Natural Diversity Database, April 6, 2009.*

3. Mare Island Navy Yard USGS MARE ISLAND Quad, California Topographic Map, April 7, 2009 Website: www.topozone.com/map

5. Cultural Resources

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions:
Mare Island Naval Shipyard facility maps illustrate that, prior to the 1870s, most of IA C3 was marshland. Dry Dock No. 1, under construction for many years, was completed by 1891. Historic records indicate that in the late 1800s, a marine railway and its associated wet basin were located in the vicinity of IR09. The wet basin was designed to hold a floating dry dock and to serve as an alternative location for ship repair. The marine railway was also designed to supplement the floating dock. By 1910, Dry Dock No. 2 and the quay wall were built, and the land between Dry Dock No. 1 and Dry Dock No. 2 was filled with artificial materials.

A definitive archaeological reconnaissance was conducted at Mare Island in 1986. The resulting report identified several areas of both prehistoric and historic archaeological interest, 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 prehistoric sites that may lie below some developed portions of Mare Island were also identified (Navy 1994). The Triangle Area is not located in a historically sensitive area or an area of pre-historic sensitivity (Navy 1994). Further, as mentioned above, the Site is constructed of artificial fill materials. Consequently, no further analysis of Cultural Resources is deemed necessary.

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:
None. Remedial activities consist of encapsulation of some structures that were built as the U.S. Navy industrialized the Site. No cultural resources exist.

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 archeological resource pursuant to 15064.5.

Impact Analysis:
None. Remedial activities consist of encapsulation of some structures that were built as the U.S. Navy industrialized the Site. No cultural resources exist.

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:
None. See explanation above.

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:
No human remains have identified within the project area. However, in the event inadvertent finds of historical resources are found, the following provisions will be complied with:
If during field operations, historic or prehistoric items of potential significance are discovered such as fossils, human remains, or any associated grave goods, a paleontologist or archaeologist designated by the U.S. ACE Project Manager will be contacted. If human remains are discovered at a Site, the county coroner must be notified pursuant to Health and Safety Code section 7050.5. If the remains found are Native American, procedures will be implemented as required by the Native American Graves Protection and Repatriation Act as described below.

If Native American human remains or any associated grave goods are found, as described in the Native American Graves Protection and Repatriation Act Section 2(3), work will be stopped in the area of the discovery, and the Lennar Mare Island Project Manager (PM) will be notified immediately.

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

References:

1. United States Department of the Navy (Navy). *Basewide Environmental Baseline Survey/Community Environmental Response Facilitation Act Report for Mare Island Naval Shipyard.* Final. December, 1994.

2. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

6. Geology and Soils

Project Activities Likely to Create an Impact:
- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader).

Description of Baseline Environmental Conditions:

The geology of Mare Island can be characterized as an eroded bedrock surface that is exposed in the southern part of the peninsula, overlain by a blanket of unconsolidated Quaternary sediments and fill material at most other locations. The bedrock surface is irregular and deeply incised in some areas, and up to 160 feet of unconsolidated materials overlie 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 1869, extends northwest along the axis of the Mare Island peninsula, roughly coinciding with Azuar Drive. The northern extent of the subsurface bedrock ridge is not known, but the ridge is present at least as far north as A Street.

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

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.

IA C3 is located primarily outside the original (pre-1869) Mare Island boundary, within an area reclaimed with artificial fill. Since 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.

Unconsolidated Natural Deposits: Unconsolidated natural deposits overlie the eroded bedrock surface on much of Mare Island. The composition of unconsolidated natural deposits on the western side of the bedrock ridge differs from the eastern side deposits. IA C3 is located east of the ridge.

On the western side of the bedrock ridge, natural deposits consist of silty clays often known as Bay Mud, with some coarse material lenses interspersed. An apparently relatively extensive sand, commonly referred to as the Lower Sand, has been noted at 50 to 65 feet below ground surface in several borings on the west side of the bedrock (but not within IA C3). East of the bedrock ridge (the industrial areas of Mare Island including IA C3), unconsolidated natural deposits primarily consist of silty clay and clay, with occasional discontinuous lenses of silty sand and sandy clay. The unconsolidated materials vary from as little as 5 feet thick on top of the bedrock ridge to more than 105 feet thick near the southern end of the peninsula.

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

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

Table 1—Regional Faults

Fault	Approximate Distance (km) and Direction from Site	Maximum Moment Magnitude
Healdsburg-Rodgers Creek	5, northwest	7.0
West Napa	9, northeast	6.5
Hayward	12, southwest	7.1
Green Valley	15, east	6.9
Concord	18, southeast	6.0
Greenville	32, southeast	6.9
Calaveras	34, south	7.1
San Andreas	40, west	7.9
San Gregario	41, 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 United States Geological Survey (USGS) 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 70 percent (USGS 2008). Similarly, USGS estimates a 21 percent probability for an earthquake on the San Andreas Fault and a 31 percent probably for an earthquake on the Hayward- Rodgers Creek Fault within the next 30 years.

Analysis as to whether or not project activities would:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

❖ Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42).
The project will not change the current land use, result in construction of new structures, or result in an increase in the number of persons present within the project area, except for the presence of construction workers during the 4- to 6-week project duration. Therefore, project activities do not have the potential to result in an increased risk of loss, injury, or death in the project area as a result of an earthquake fault rupture.

❖ Strong seismic ground shaking.
Nearby faults have caused severe ground shaking at the Site in the past and could occur in the future. However, the project is not changing current land use and the planned restoration activity will not expose people or structures to strong seismic ground shaking.

❖ Seismic-related ground failure, including liquefaction.
The potential impacts of ground shaking and failure include liquefaction of soils. Liquefaction is characterized by the rapid loss of strength of cohesive soils during large earthquake motions. It is anticipated that the project activities should not make the Site more likely to undergo liquefaction.

❖ Landslides.

Impact Analysis:
The project area is relatively flat; therefore, there is no anticipated threat of landslides occurring due to project activities that would expose people or structures to potential substantial adverse effects.

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

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

Impact Analysis:
The project area is relatively flat; therefore, during construction activities, there is no anticipated threat of soil erosion. During Site restoration, the Site will be completely paved and will not result in soil erosion.

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

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

Impact Analysis:
The project Site is relatively flat and is not located on unstable soil. Project activities are not expected to result in an offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. After encapsulation, the Site will be restored to existing conditions.

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

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

Impact Analysis:
The Site is not located on expansive soil; therefore, the project will not create substantial risks to life or property.

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

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

Impact Analysis:
No septic tanks or other wastewater disposal systems are to be constructed within the project boundaries. Sewers are available for disposal of waste water in the vicinity of the project area.

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

f. Be located in an area containing naturally occurring asbestos (see also Air Quality, f.).

Impact Analysis:

As illustrated on the California Air Resources Board (CARB) map entitled "General Location Guide for Ultramafic Rocks in California Area More Likely to Contain Naturally Occurring Asbestos," (CARB 2000) no ultramafic rocks likely to contain naturally occurring asbestos are present in the project area.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

2. California Air Resources Board (CARB). 2000. "General Location Guide for Ultramafic Rocks in California Area More Likely to Contain Naturally Occurring Asbestos." Open File Report 2000-19

3. Dibblee, T. 1981. Preliminary Geologic map of Mare Island Quadrangle. Solano and Contra Costa County, California. U.S. Geological Survey Open File Report, 81-0234.

4. United States Geological Survey (USGS). 2008. *Forecasting California's Earthquakes – What Can We Expect in the Next 30 Years?* USGS Fact Sheet 2008-3027.

5. Wagner, D.L. and E.J. Bortungo. 1982. *Geologic Map of the Santa Rosa Quadrangle, California*. Scale: 1:250,000. California Division of Mines.

7. Hazards and Hazardous Materials

Project Activities Likely to Create an Impact:
- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader).

Description of Baseline Environmental Conditions:
The Site was owned and operated by the Navy and initial Site development occurred between 1872 and 1910. The Site was formerly used for industrial processes including vessel production, maintenance, storage, paint manufacturing, and office space to support the dry docks. Refer to the Project Description section of this document that includes a detailed Project Background discussion.

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:
Hazardous materials that will be on the Project Site are fuel and lubricants and will be brought on the Site periodically following standard construction practices. Transportation of fuel and lubricants will conform with state and federal requirements for hazardous materials transportation. Periodically, these will be brought to the Site on a designated path (Figure 2) and will be dispensed by service vehicles; onsite storage of hazardous materials will not occur. Applicable Site controls, such as proper cleanup/decontamination procedure, will be implemented. Site activities will be performed consistent with a site-specific Health and Safety Plan (HSP). Limited removal activities would be performed and the entire Site would be repaved. There would be little risk to construction workers during remedial action. Only minor exposure risks to workers might occur during paving system repair. Hazardous waste will not be generated or transported offsite.

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:
Transportation and dispensing of small quantities of fuel and lubricants will be performed according to standard construction practices and will not result in a release to the environment. In the event of an accidental release, the emergency response procedures specified in the HSP will be followed.

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:
Encapsulation activities will not generate any hazardous wastes. Also, an existing or proposed school is not located within 0.25 mile of the project Site.

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

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

Impact Analysis:
The proposed project is identified as an active site on DTSC's Cortese list complied pursuant to Government Code Section 65962.5. However, the proposed removal activities are not expected to create a hazard to the public or the environment. The proposed activities are intended to reduce hazards by encapsulating contaminated material at the Site.

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

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

Impact Analysis:
All work will be conducted in accordance with the site-specific Health and Safety Plan (HSP), which will include an Emergency Response Plan. Personal Protective Equipment (PPE) requirements will be task specific but will include the following: Uncoated Tyvek® or durable cotton coveralls; chemical-resistant boots, or safety-toe boots, or leather work boots with outer rubber boot covers; inner nitrile gloves and outer chemical resistant nitrile gloves, or leather work gloves; ear protection; hardhat; splash shield; safety glasses with side shields.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.
2. CH2M Hill, electronic mail, April 17, 2009.

8. Hydrology and Water Quality

Project Activities Likely to Create an Impact:

- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader).

Description of Baseline Environmental Conditions:

Regionally, surface water surrounding Mare Island is influenced by a variety of rivers, including the Sacramento and San Joaquin rivers that flow into the Carquinez Strait. The Napa River flows into Mare Island Strait. The combined waters subsequently mix in the San Pablo Bay. With seasonal variability in salinity, flow, and sediment deposition, the aquatic environment surrounding Mare Island is highly dynamic.

Surface water on Mare Island consists of tidal and non-tidal wetlands. Wetlands comprise about 70 percent of Mare Island's approximate 5,600 total acres. Tidal wetlands are areas that are influenced by tidal action and include both northern coastal salt marsh and brackish marsh areas at Mare Island. Mare Island's tidal wetlands are regionally significant, representing approximately 2 percent of the Bay Area's remaining 127 square miles of tidal wetlands (California Regional Water Quality Control Board, San Francisco Bay Region 1995).

No surface water bodies are present within the boundaries of the Triangle Area. Surface water runoff from the area discharges into the storm water system or flows out to the Mare Island Strait.

The primary water-bearing zone in IA C3 is a shallow, unconfined aquifer, which includes those parts of the fill and original soil that are below the water table and the top portion of the weathered bedrock. Two deeper water-bearing zones have been identified in the western portion of Mare Island. These other water-bearing zones were not encountered by CH2M HILL and do not appear to be present in IA C3. In general, water levels in monitoring wells in IA C3 are highest during the wet season (November to April) and lowest during the dry season (May to October). Project Site activity is scheduled to occur in December 2009.

Analysis as to whether or not project activities would:

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

Impact Analysis:

Any wastewater generated during encapsulation activities will either be treated and disposed of to the sanitary sewer or disposed at an approved offsite facility. Adequate capacity exists to accommodate project activities.

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 deficient 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:

Encapsulation activities will not encounter or affect groundwater.

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:
Encapsulation activities will not alter the existing drainage pattern in the area.

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:
The existing drainage pattern in the area (surface runoff to the stormwater system) will not be altered in a manner that would result in flooding on- or offsite. The existing contour will not be modified.

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:
Encapsulation activities are not expected to contribute runoff water that would exceed capacity of the existing stormwater drainage system.

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

f. Otherwise substantially degrade water quality.

Impact Analysis:
A shallow unconfined aquifer is the primary water bearing zone. Encapsulation activities are not expected to substantially degrade water quality.

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

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

Impact Analysis:
Encapsulation activities will not add any structures to the Site. Only heavy equipment, such as a paver, backhoe, bulldozer, or grader will be at the Site during the Site encapsulation project.

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

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

Impact Analysis:
No dams or related structures are present within the project boundary; therefore, there is no anticipated risk of loss, injury, or death involving flooding due to dam or related structure failure.

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

i. Inundation by seiche, tsunami or mudflow.

Impact Analysis:
There is no anticipated risk related to inundation by seiche, tsunami, or mudflow. There will be no topographical changes due to the encapsulation of the Site Project that would pose a threat if inundated by seiche, tsunami, or mudflow.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

2. California Regional Water Quality Control Board, San Francisco Bay Region. 1995. *San Francisco Bay Basin (Region 2) Water Quality Control Plan*. June 21.

9. Land Use and Planning

Project Activities Likely to Create an Impact:
- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader).

Two land use covenants (LUCs) would apply to the Site. The IA C3-wide LUC would limit future development to commercial/industrial use of the Site, which would prohibit sensitive uses (e.g., for residences, hospitals, daycare facilities, and schools for persons under age 18) at the Site. Additionally, this remedial alternative would add recordation and implementation of a site-specific LUC to address BGM and BGM-impacted soil left in place at the Site.

Description of Baseline Environmental Conditions:
Past land use in the Triangle Area was industrial. The proposed redevelopment plan for the Triangle Area is for industrial/commercial use. No zoning or land use changes are being proposed as a result of project implementation. For these reasons, no further analysis of impacts is deemed necessary.

Analysis as to whether or not project activities would:

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

Impact Analysis:
Historically, the Project Site area was used for heavy industrial activity (ship maintenance and repair). It will continue to be an industrial zone. As mentioned in the project activities above, a site-specific LUC will be applied to the property to address BGM-impacted soil left in place at the Site.

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

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

Impact Analysis:
None. Please refer to Section 4 entitled, "Biological Resources." There will be no effects to natural community conservation plans because the Site is in an industrial/commercial area.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

10. Mineral Resources

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions: The project Site has been used as a naval ship maintenance and repair facility for approximately 150 years. The project Site is composed of artificial fills and is not an area of valuable or important mineral resources. Consequently, no further analysis of mineral resources is deemed necessary. No known mineral resources exist within the property boundaries.

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:

None. There are no valuable mineral resources at the project Site.

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:

None. There are no locally-important mineral resource recovery sites at the project Site.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

11. Noise

Project Activities Likely to Create an Impact:

- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader).

Description of Baseline Environmental Conditions:

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

The California Department of Health Services has published guidelines for the noise element of local general plans. The noise element guideline identifies the normally acceptable community noise equivalent level (CNEL) range for low-density residential uses as less than 60 dB, while the conditionally acceptable is 50 to 70 dBA. The normally acceptable range for high-density residential uses is identified as CNEL values below 65 dBA, while the conditionally acceptable range is identified as 60 to 70 dBA (WESTDIV and City of Vallejo 1998).

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. Regardless of classification, noise limits are regulated at the lot-line of the property.

The existing primary noise sources on the west side of Mare Island are engine noises from commercial shipping, vessel traffic, and occasional aircraft over-flights. Wind and wildlife produce ambient noise.

Analysis as to whether or not project activities would:

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 heavy equipment at the project Site consists of loaders, backhoes, asphalt pavers, and rollers. The operating noise of these machines typically does not emit noise exceeding the Occupational Safety and Health Administration (OSHA) level of 90 decibels.

Hearing protection will be used, consistent with the site-specific Health and Safety Plan (HSP), to ensure that appropriate noise criteria are attained for construction workers working at the project Site. Workers will wear earplugs while working on and around heavy equipment. If necessary, engineering controls may be implemented, including replacing defective equipment parts, tightening loose or vibrating equipment parts, and placing “noisy” equipment away from the work area. Should engineering controls be infeasible, administrative controls will be implemented, including adjusting employee work assignments to limit their noise exposure. For residents and other receptors located off the project Site, the overall noise (L_{eq}) emitted from construction activities within the project boundary is expected to be within conditionally acceptable CNEL range.

Conclusion:

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

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

Impact Analysis:

Some equipment, such as jackhammers, may contribute to ground-borne vibration or noise levels. Workers will wear appropriate hearing protection, and engineering controls will be used to reduce noise levels. Although not anticipated,

CH2M HILL may conduct noise monitoring to confirm that workers are not exposed to hazardous noise levels. If necessary, work zone perimeters will be set so that the public cannot be exposed to hazardous noise levels.

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 will last approximately 4 to 6 weeks; therefore, no permanent increase in ambient noise levels is expected.

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

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

Impact Analysis:
As mentioned in Part (a) above, noise levels outside the project boundaries are expected to be within the range of ambient noise levels determined during the 2001 noise survey at Mare Island. Workers at the project Site will be required to wear appropriate hearing protection to reduce noise levels.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

2. CH2M Hill, electronic mail, March 19, 2009.

3. 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.

12. Population and Housing

Project Activities Likely to Create an Impact: None.

Description of Baseline Environmental Conditions:
The proposed redevelopment plan for the Triangle Area is industrial/commercial. This land use is similar to past land uses in the area. No zoning or land use changes are being proposed as a result of project implementation. Project activities will not induce growth in the Site area, nor will they necessitate any construction of replacement housing. For these reasons, no further analysis of 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: None. There are no activities that would affect population growth in the Project Site area.

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:
None. The project Site is used as an industrial zone and no housing would be affected by the project.

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:
None. There will be no displacement of residents under the project.
.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

13. Public Services

Project Activities Likely to Create an Impact: None. The project Site has been used since the 1870's for ship maintenance and repair

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 routinely patrols the Island on a daily basis. The Vallejo Fire Department provides fire protection for Mare Island and the City of Vallejo. Station No. 8, located at Mare Island on Nimitz Avenue, is staffed 24 hours a day and is operated by Engine Company #8.

At least one Emergency Medical Technician is located at Station No. 8. Kaiser Medical Center, Sutter-Solano Medical Center, and First Hospital in Vallejo provide medical services for community residents. Kaiser and Sutter-Solano Hospitals operate full-service, 24-hour emergency rooms. There is no ambulance service provided by the Vallejo Fire Department on Mare Island or the City of Vallejo. Ambulance service is typically provided by private ambulance services.

Analysis as to whether or not project activities would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

❖ Fire protection

None.

❖ Police protection
None.

❖ Schools
None.

❖ Parks
None.

❖ Other public facilities
None.

Impact Analysis:
None. Please see explanation above, "Description of Baseline Environmental Conditions." No effects to the above resources are anticipated. Current fire, police, and hospital services are adequate to meet the Project's needs.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

14. Recreation

Project Activities Likely to Create an Impact:
None.

Description of Baseline Environmental Conditions:
The project does not entail activities associated with recreation or movement of populations towards recreational facilities. No zoning or land use changes are being proposed as a result of project implementation. For these reasons, no further analysis of 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:
None. See explanation above.

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:
None. See explanation above.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

15. Transportation and Traffic

Project Activities Likely to Create an Impact:
- Installing and maintaining an encapsulating surface using appropriate construction equipment (may include paver, backhoe, bulldozer, or grader).

Description of Baseline Environmental Conditions:
Traffic on the streets within Mare Island is fairly light. During the project work, Mare Island will host a variety of traffic consisting of trucks delivering equipment and materials, personnel, and support vehicles. The project activities will contribute to vehicle traffic at various times and locations and will be assessed daily since the exact times and locations of the traffic cannot be defined prior to the start of fieldwork.

Analysis as to whether or not project activities would:

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

Impact Analysis:
Construction activities would last approximately 4 to 6 weeks. Approximately 24 truck trips per day are anticipated during paving activities, and approximately five (5) truck trips per day are anticipated during Site preparation activities. Traffic controls during encapsulation activities will be used to provide for the efficient completion of the work activities in a safe working environment. All traffic control activities shall conform to the applicable specifications of the *Manual of Traffic Controls for Construction and Maintenance Work Zones* (Caltrans 1996).

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

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

Impact Analysis:
The project Site is not subject to a level of service standard since it does not fall under the jurisdiction of a county congestion management agency.

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

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

Impact Analysis:
No materials or equipment will be stored where it will interfere with the free and safe passage of facility personnel and tenants. At the end of each day's work and at other times when construction operations are suspended for any reason, all equipment and other obstructions will be removed from the roadway used by facility and tenant traffic. If the construction operations create potential hazardous conditions to traffic or tenants, fences, signs, and other devices will be used to prevent accidents or injury to facility personnel. All equipment will be used for its intended purpose and will not be used for incompatible purposes.

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

d. Result in inadequate emergency access.

Impact Analysis:
While working within the project boundaries, care will be taken to ensure emergency access to and from the area.

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

e. Result in inadequate parking capacity.

Impact Analysis:
The project area is located around mostly vacant buildings. There are adequate open spaces for all necessary equipment and trucks; therefore, activities are not expected to impact available parking.

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

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

Impact Analysis:
No policies, plans, or programs supporting alternative transportation currently exist at this closed facility.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

2. CH2M HILL, electronic mail, April 17, 2009.

3. California Department of Transportation (Caltrans). 1996. *Manual of Traffic Controls for Construction and Maintenance Work Zones*.

16. Utilities and Service Systems

Project Activities Likely to Create an Impact:
None.

Description of Baseline Environmental Conditions: The project Site was used in the past as a ship maintenance and repair facility for the U.S. Navy and closed in 1996. Encapsulation activities will not contribute to wastewater, water, or surface water utility use.

Analysis as to whether or not project activities would:

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

Impact Analysis:
None. Any wastewater generated during encapsulation activities will be treated and disposed of to the sanitary sewer or disposed at an approved offsite facility. Adequate capacity exists to accommodate project activities.

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:
None required.

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:
None required.

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:
Water is necessary to rinse off equipment for the project activities. Existing water supply brought in through the City of Vallejo would be used; therefore, service or a new supply is not necessary.

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:
Any wastewater generated during encapsulation activities will be treated and disposed of to the sanitary sewer or disposed at an approved offsite facility. Adequate capacity exists to accommodate project activities.

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

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

Impact Analysis:
Waste generated during project activities will be disposed of in a licensed offsite facility with sufficient permitted capacity to accept the solid waste generated from project activities.

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

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

Impact Analysis:
Project activities including disposal of solid waste will comply with all federal, state, and local statues and regulations.

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

References:

1. CH2M HILL. *Feasibility Study/Remedial Action Work Plan for Black Granular Material in the Investigation Area C3 Triangle Area, Lennar Mare Island, Vallejo, California*. Draft. January, 2009.

2. Title 40, Code of Federal Regulations, section 122.26, NPDES Industrial Storm Water Permit Program.

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.

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.

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

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: 4/30/09
Henry Chui (Preparer's Name)	Hazardous Substance Engineer (Preparer's Title)
510-540-3759 (Phone #)	
Branch or Unit Chief Signature	Date: 4/30/09
Daniel E. Murphy (Branch or Unit Chief Name)	Senior Hazardous Substance Engineer (Branch or Unit Chief Title)
510-540-3772 (Phone #)	

ATTACHMENT A

REFERENCES

BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans, 1999, Web site www.baaqmd.gov/pln/ceqa_guide.pdf. Accessed on April 21, 2009.

Bay Area Air Quality Management District (BAAQMD). 2008a. Web site www.baaqmd.gov/pln/ambient_air_quality.htm. Accessed on January 6, 2009.

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California Air Resources Board (CARB). 2000. "General Location Guide for Ultramafic Rocks in California Area More Likely to Contain Naturally Occurring Asbestos." Open File Report 2000-19

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Dibblee, T. 1981. Preliminary Geologic map of Mare Island Quadrangle. Solano and Contra Costa County, California. U.S. Geological Survey Open File Report, 81-0234.

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.

United States Department of the Navy (Navy). 1994. *Basewide Environmental Baseline Survey/Community Environmental Response Facilitation Act Report for Mare Island Naval Shipyard.* Final. December.

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Wagner, D.L. and E.J. Bortungo. 1982. *Geologic Map of the Santa Rosa Quadrangle, California*. Scale: 1:250,000. California Division of Mines.

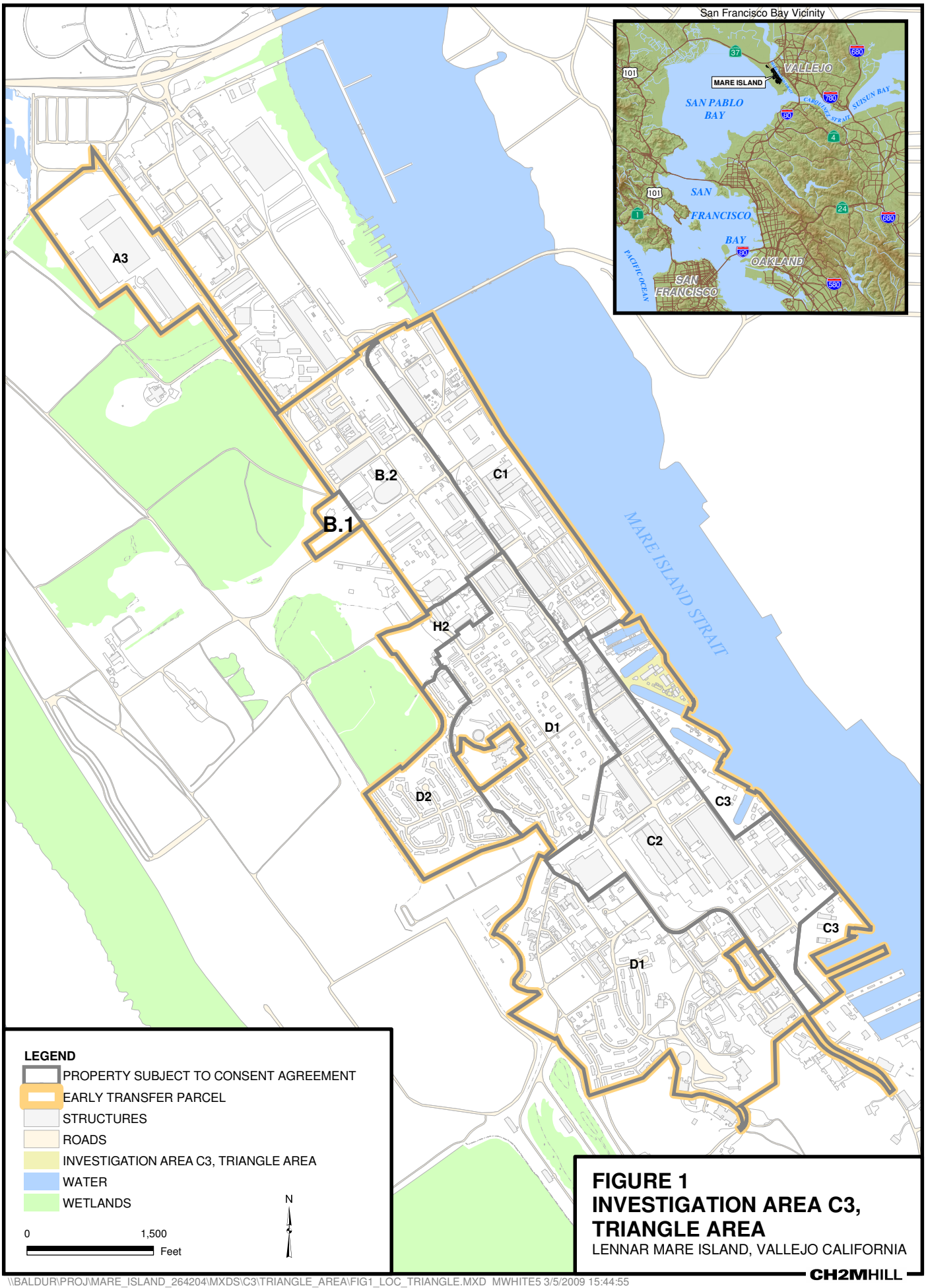

FIGURE 1
INVESTIGATION AREA C3, TRIANGLE AREA
LENNAR MARE ISLAND, VALLEJO CALIFORNIA

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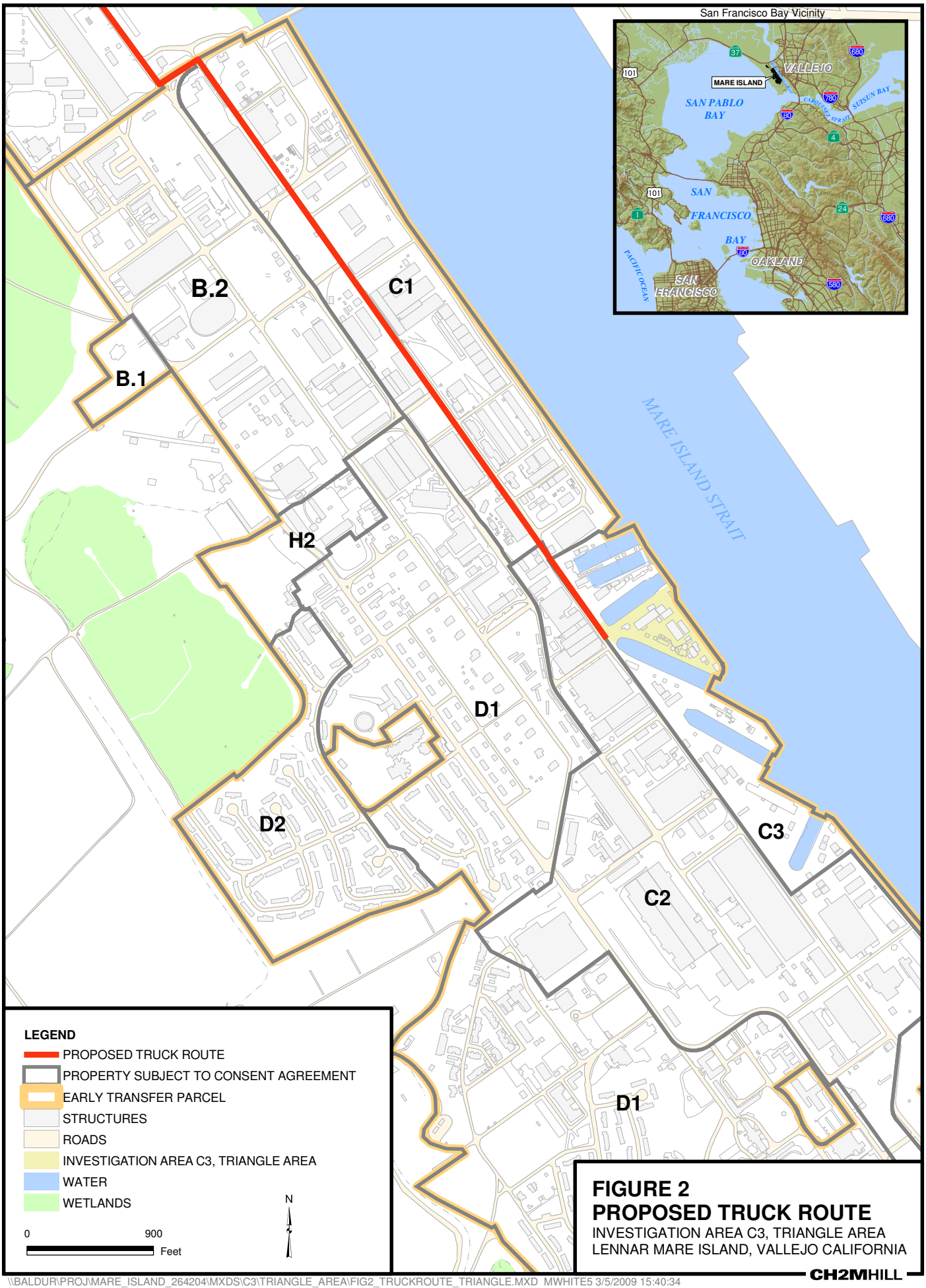
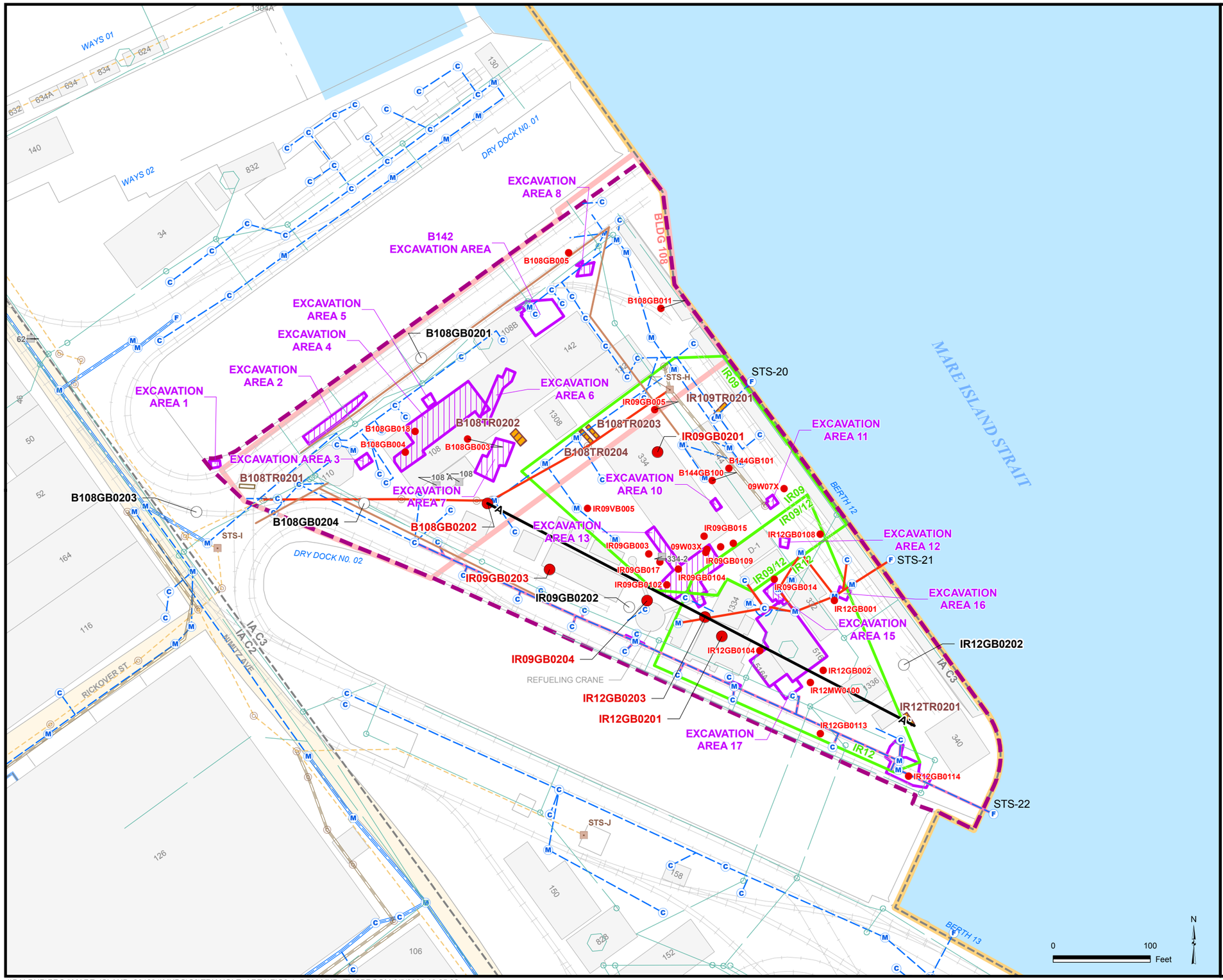


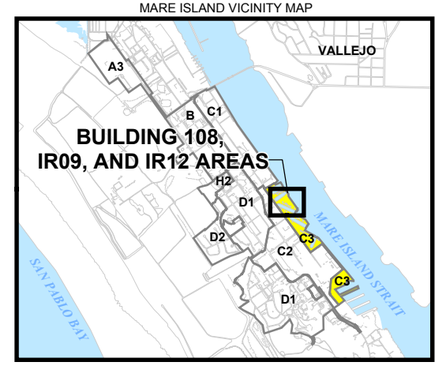
FIGURE 2
PROPOSED TRUCK ROUTE
INVESTIGATION AREA C3, TRIANGLE AREA
LENNAR MARE ISLAND, VALLEJO CALIFORNIA

CH2MHILL

\\BALDUR\PROJ\MARE_ISLAND_264204\MXDS\C3\TRIANGLE_AREA\FIG2_TRUCKROUTE_TRIANGLE.MXD MWHITE5 3/5/2009 15:40:34



MARE ISLAND VICINITY MAP



LEGEND

- BORING LOGS PRIOR TO 2008 INDICATE POTENTIAL BGM
- 2008 FIELD INVESTIGATION BORINGS WHERE BGM WAS NOT OBSERVED
- 2008 FIELD INVESTIGATION BORINGS WHERE BGM WAS OBSERVED
- UNDERGROUND STORAGE TANK
- STORM SEWER OUTFALL
- STORM SEWER CATCHBASIN
- STORM SEWER MANHOLE
- SHIP-TO-SHORE PUMP STATION
- SEWAGE PUMP STATION
- SEWER MANHOLE
- BGM CONCEPTUAL SITE MODEL
- UNDERGROUND ELECTRICAL UTILITY
- UNDERGROUND TELEPHONE UTILITY
- BACKBONE SEWER PIPELINE
- SEWER SERVICE LINE
- STORMWATER BACKBONE
- STORMWATER SERVICE LINE
- STORMWATER PIPELINE REMOVED
- RAILROAD
- INVESTIGATION AREA
- BGM IDENTIFIED AS UTILITY BACKFILL
- SITE BOUNDARY
- 2006 EXCAVATION AREA
- BGM IDENTIFIED DURING EXCAVATION
- 2008 FIELD INVESTIGATION TRENCH
- BGM IDENTIFIED DURING 2008 FIELD INVESTIGATION
- GROUP I SITE
- GROUP II, III SITE
- EASTERN EARLY TRANSFER PARCEL
- STRUCTURE
- ROAD
- WATER

FIGURE 3-1
BLACK GRANULAR MATERIAL OBSERVATIONS AND 2008 SOIL BORING AND TRENCH LOCATIONS IN THE INVESTIGATION AREA C3 TRIANGLE AREA

FEASIBILITY STUDY/REMEDIAL ACTION PLAN
FOR BLACK GRANULAR MATERIAL IN THE
INVESTIGATION AREA C3 TRIANGLE AREA
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA

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\\BALDUR\PROJ\MARE_ISLAND_264204\MXDS\C3\TRIANGLE_AREA\FIG3-1_BGM.MXD TMCBROOM 3/5/2009 10:25:32