

manager to ensure that the secondary nature of the materials is documented appropriately and that the primary and secondary locations of such materials are plotted on appropriate maps and documented in such a way to inform future researchers.

3.3.3 Hazardous Waste/Materials

Hazardous materials and wastes can be encountered unexpectedly during the construction and operation of public projects. Examples of common hazardous materials include asbestos, lead-based paint, and volatile organic compounds²⁷, and, without proper handling, removal, and containment, can pose dangers to the public. Identifying potential waste sites prior to construction is important because it can substantially reduce the possibility of exposure to people and the environment. In the event unexpected encounters do occur, having proper plans and procedures in place further reduces that risk.

This section presents a summary of the hazardous materials and wastes which are located in the Doyle Drive Project study area. More information can be found in the *South Access to the Golden Gate Bridge: Doyle Drive Project Revised Preliminary Site Investigation*, October 2004.

Regulatory Setting

Federal, state, and local laws and regulations govern the use, storage, transportation, and disposal of hazardous materials, as well as including management of contaminated soils and groundwater. The U.S. Environmental Protection Agency (EPA) is the Federal-administering agency for hazardous waste regulations. State and regional agencies are responsible for administering and enforcing California laws and regulations. These include the California Environmental Protection Agency (Cal EPA) Department of Toxic Substances Control (DTSC), the San Francisco Bay Regional Water Quality Control Board (SFRWQCB), the California Air Resources Board (CARB), and the Bay Area Air Quality Management District (BAAQMD). Locally, the San Francisco Department of Public Health (SFDPH) is responsible for certain hazardous material regulation enforcement within the city and county of San Francisco. The San Francisco Fire Department (SFFD) acts as first responder for hazardous material incidents within the study area. The U.S. Department of Transportation (USDOT) is the Federal-administering agency for hazardous materials transportation safety.

Additional laws, regulations, policies, and programs regulate the investigation of Federal properties, such as the Presidio, which are affected by hazardous materials. One of the primary laws affecting Federal properties is the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA).

²⁷This term is generally applied to organic solvents, certain paint additives, aerosol spray-can propellants, fuels (such as gasoline and kerosene), petroleum distillates, dry cleaning products, and many other industrial and consumer products ranging from office supplies to building materials.

Passed in 1980, CERCLA created national policies and procedures to identify and remediate sites affected by hazardous substance releases.

The National Park Service (NPS) provides additional guidance for management of hazardous materials and wastes in national parks through NPS policies set forth in the following Director's Orders, Executive Order, and Staff Directive:

- *Director's Order 13A – Environmental Management Systems*
- *Director's Order 30A – Solid and Hazardous Waste Management (under development)*
- *Director's Order 30B – Hazardous Spill Response (under development)*
- *Executive Order No 13148 – Greening the Government through Leadership in Environmental Management*
- *Staff Directive 76-20 – Disposal of Hazardous and or Solid Waste (Resource Conservation and Recovery Act)*

Affected Environment

The project is located within the Presidio, which was a military installation until 1994. Due to its military past and the age of the facilities, a number of hazardous materials sites are located within the project area.

In December 1988, the Presidio Army Base was proposed for closure. From 1988 to 1999, the U.S. Army was responsible for investigation and remediation of environmental issues at the Presidio. Several environmental investigations of the Presidio were conducted during the base closure process in accordance with CERCLA.

In 1999, an agreement was reached between the Army and the Presidio Trust to transfer responsibility for the remaining environmental cleanup to the Trust. Although the portion of the Presidio north of Doyle Drive is administered by the NPS, and the NPS is a participating agency for remediation in those areas, the Trust remains the lead agency for all remediation activities at the Presidio.

Methodology

Information from the above activities provided a foundation for identifying existing hazardous materials sites in the study area. Data collection tasks included:

- **Data Survey:** A *Preliminary Site Investigation* (PSI) was conducted to identify hazardous waste/materials within the potential Doyle Drive Project study area. Information for this investigation was obtained by a review of previous environmental investigations, historical aerial photographs, topographic maps, regulatory agency databases and case files, and a visual reconnaissance of the alignment. No soil or groundwater samples were collected for this investigation.

- **Regulatory Database Search:** Regulatory agency databases were reviewed to determine regulatory agency actions regarding hazardous materials within 300 meters (984 feet) from the Doyle Drive construction limits.
- **Consultation with the Presidio Trust:** Additional information on environmental investigations and the current status of these areas of concern were collected by communication with Trust staff.

Potential Sources of Contamination

Regulatory records identified nine sites within the projected construction limits. An additional twenty-five sites, called areas of concern, either use, store, or dispose of hazardous materials, or have had a reported release of hazardous materials. The following is a description of the nine sites within the immediate project area. Numbers in front of each location indicate the location presented in **Exhibit 3-44**.

1. Building 669 Area: Building 669 is a former incinerator, used to cremate animal carcasses. Ash from the incinerator was historically disposed on adjacent hillsides. During the Highway 101 viaduct investigation, Caltrans found elevated concentrations of lead in soils near an adjacent hillside. The Trust proposes to perform additional investigation in this area to determine the extent of the lead and analyze the soil for polynuclear aromatic hydrocarbons (PAHs).

2. Doyle Drive Viaduct: An investigation of metals determined that total lead was the primary contaminant of concern. Six of the seven areas studied contained “hazardous” surface soils. The source of the elevated metals concentration was not determined in the investigation; but potential sources include vehicle exhaust and historic sandblasting of the viaduct during maintenance activities, which could have released lead-based paint dust.

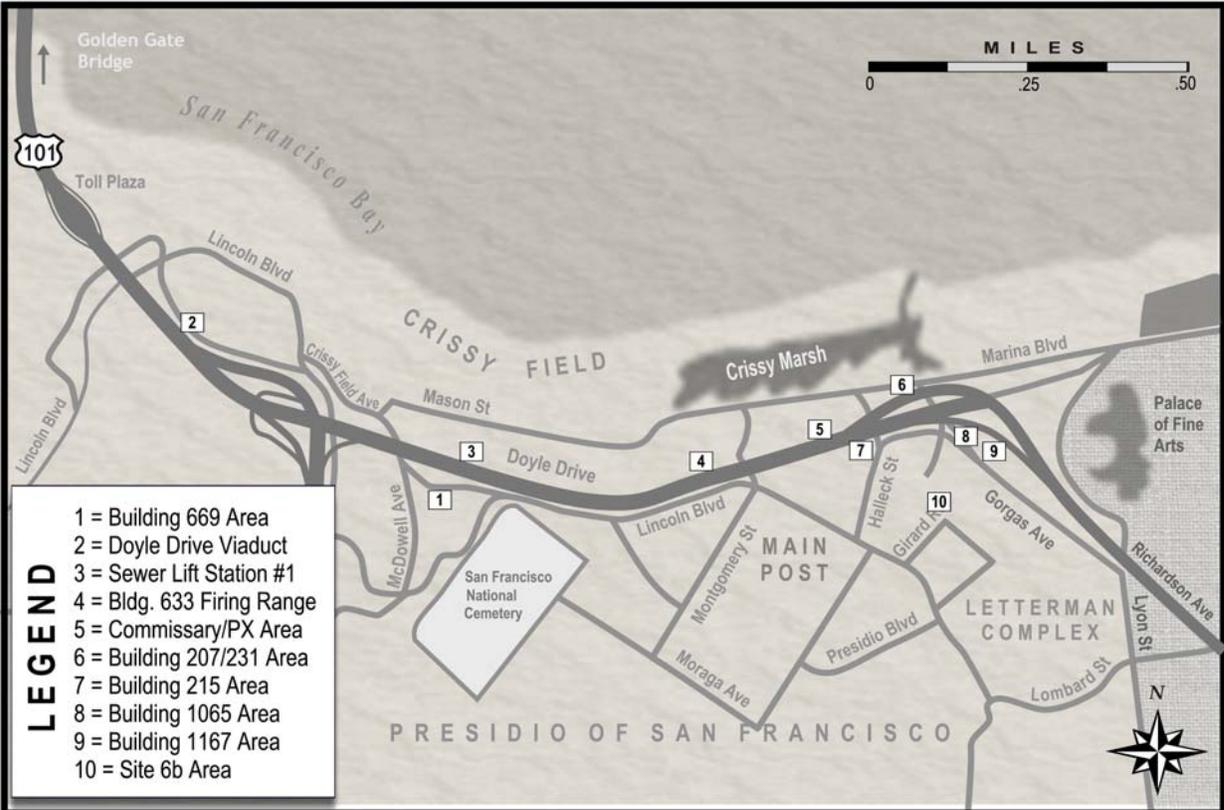
3. Sewer Lift Station #1: This is a lift station for waste water generated at the Presidio. During a CERCLA investigation, lead, nickel, and zinc were identified at elevated concentrations in the soils. Arsenic, barium, chromium, lead, and nickel were present above Trust cleanup thresholds in unfiltered groundwater samples. Further investigation is proposed, including groundwater sampling to confirm the findings of the unfiltered groundwater samples.

4. Building 633 Firing Range: This former firing range enclosed by a concrete structure includes sand, where spent ammunition accumulated. The Trust proposes to remove the concrete structure and sand as part of the restoration process. Lead-contaminated soils are present both in the target area as well as in the firing line area.

5. Commissary/PX Area: The Commissary/PX area historically contained a number of structures that constituted the Presidio Consolidated Motor Pool. Throughout 2000, the Trust conducted a series of investigations to identify and delineate the source of gasoline in the groundwater seeps at Crissy Field. Interim source removal activities, including the excavation of petroleum-affected soils, were conducted to address the groundwater seep contamination. During 2002 and 2003, two additional investigations were conducted to delineate petroleum contamination in this area. A *Corrective Action Plan* is currently being prepared.

6. Building 207/231 Area: Buildings 207 and 231 were former gasoline service stations on Halleck Street. Building 207 was located immediately north of Doyle Drive; Building 231 is immediately south. Underground storage tanks were removed from the Building 207 site in 1996; several tanks (including some solvent tanks) were removed from Building 231 from 1988 through 1996. Some contaminated soil and free-phase petroleum product were removed during the excavation. The Trust has prepared a revised *Corrective Action Plan* to address contamination at this site, which has been submitted to regulatory agencies for review.

Exhibit 3-44
Hazardous Material Sites within the Study Area



7. Building 215 Area: The Building 215 area is the location of the former Burger King restaurant building in the Main Post area, and the historical location of a gasoline station and vehicle maintenance facility. The Army removed two underground storage tanks from this area in the late 1980s. In 2003, petroleum-affected soils were removed from this site. The site is proposed for additional monitoring under the Petroleum Program to evaluate the effectiveness of the soil removal action.

8. Building 1065 Area: This is a former underground storage tank site, where petroleum hydrocarbons and associated volatile organic compounds have been identified in soils and groundwater. An interim cleanup was performed by the Trust in late 2003 and early 2004 to remove petroleum-contaminated soils. The Trust is in the process of documenting the Interim cleanup action and preparing a revised *Corrective Action Plan* for this area.

9. Building 1167 Area: This building was historically used for furniture manufacturing, which included painting and staining. Elevated concentrations of arsenic and lead have been identified in a limited area of soils near the building. The Trust proposes to remove the metals-affected soils.

10. Fill Site 6B: This site is a portion of a former Army landfill, which contains construction debris and soil from demolition of buildings in the Letterman Complex. In the late 1990s, the Army began the Remedial Investigation phase at this site. The Trust proposes to perform additional soil sampling in 2006, which will be used to complete the Remedial Investigation and subsequent Feasibility Study for the site. Using information from these documents, proposed remedial action at this site will be outlined in a Remedial Action Plan, which will be subject to DTSC approval.

Temporary Impacts

The following discussion summarizes the potential temporary impacts associated with the alternatives. Because all alternatives are generally located within the same corridor, there is little variation between the alternatives.

Alternative 1: No-Build Alternative

There are no impacts associated with the No-Build Alternative because there would be no disturbance of sites potentially containing hazardous wastes. At present, soils in the viaduct area of Doyle Drive contain elevated levels of total lead, potentially from lead-based paint dust and aurally-deposited lead from vehicle exhaust. Elevated levels of lead could exist in shallow soils along the entire alignment if conditions were similar to those identified during investigation of the viaduct. These conditions would continue under the No-Build Alternative. Lead containment systems currently used during painting operations would continue to be used.

Alternative 2: Replace and Widen

All of the permanent impacts resulting from Alternative 2 are impacts which will also result from Alternative 5. These mutual impacts are discussed later in this section.

Alternative 5: Presidio Parkway

All of the permanent impacts resulting from Alternative 2 are impacts which will also result from Alternative 5. These mutual impacts are discussed later in this section.

Alternative 2: Replace and Widen and Alternative 5: Presidio Parkway

Thirty-four sites within the study area that use, store, dispose of, or have released hazardous materials were identified in regulatory agency databases. Except for nine sites located within the projected construction area, and an additional gun firing range still under evaluation, all areas of concern within or near the construction limits were evaluated as having no potential to affect the built alternatives based on the extent of contamination defined in previous investigations and the status of remedial activities. Depending on the timing of remedial efforts currently proposed by the Trust, remediation of some of the remaining sites at the Presidio could be completed prior to construction of any build alternatives for Doyle Drive.

The following types of impacts may occur during construction:

Exposure to Historic Hazardous Materials and Existing Aerially-Deposited Contaminants

Development of the Doyle Drive build alternatives may expose construction workers to hazardous concentrations of metals and other contaminants from aerially-deposited lead, viaduct coatings, and historic hazardous materials releases along the project site. Potential means of worker exposure to hazardous materials and wastes include inhalation, ingestion, or skin contact. Contaminated soils may also have the potential to be entrained in stormwater runoff, which is evaluated in section 3.3.1 of this document (Hydrology, Water Quality, and Stormwater).

Exposure to Naturally-Occurring Asbestos

Development of the Doyle Drive build alternatives may expose construction workers to hazardous concentrations of naturally-occurring asbestos present in serpentinite bedrock. Intact bedrock itself poses no risk factor. Drilling, excavation, and removal of serpentinite could expose workers to airborne asbestos.

Exposure to and Disposal of Contaminated Groundwater

Construction dewatering could potentially discharge contaminated groundwater to sanitary and/or storm sewers, potentially affecting surface water quality. Hexavalent chromium, petroleum hydrocarbons, arsenic, barium, lead, nickel,

and benzene have been detected in water samples at localized areas within the Presidio.

Exposure to Building Demolition Hazardous Materials

Demolition of structures for development of the Doyle Drive build alternatives may expose construction workers, park visitors, and nearby workers and residents to hazardous concentrations of lead and/or asbestos from building materials. Lead oxide and lead chromate were commonly used in paints until 1978, when regulations limited the allowable lead content in paint. Therefore, interior and/or exterior painted surfaces at buildings constructed prior to 1978 have the potential to contain lead-based paint. Lead-based paint surveys have been conducted by the Army at family housing buildings at the Presidio, but none are known to have been completed for buildings likely to be affected by the Doyle Drive build alternatives.

Asbestos was commonly used in construction materials until the 1980s, when its use was phased out. Therefore, building materials manufactured prior to the 1980s have the potential to contain asbestos fibers, which could be released during demolition activities. A base-wide asbestos survey was performed for the Army in 1989. Identified materials containing friable asbestos (asbestos that can be released by hand pressure) were abated by the Army, but most materials containing non-friable asbestos were left in-place. Caltrans has estimated that eighty percent of the buildings adjacent to Doyle Drive contained asbestos.

Project Interference with Presidio Remediation Actions

Development of the Doyle Drive build alternatives could potentially interfere with the investigation and remediation of hazardous material sites at the Presidio.

Permanent Impacts

Any impacts related to the use and transport of hazardous materials or the disturbance of hazardous waste sites would be limited to the construction period. Although a release of hazardous materials during the construction period could potentially have long-lasting effects, construction-phase mitigation measures would be implemented to address this potential issue. While historically, traffic exhaust resulted in notable amounts of aurally-deposited lead to accumulate adjacent to roadways, lead-free gasoline and vehicle emissions devices have reduced aurally-deposited lead from exhaust to a non-issue. Therefore, no permanent impacts are anticipated.

Avoidance, Minimization, and/or Mitigation Measures

A number of procedures will be performed prior to construction. Although the nature and likely extent of hazardous materials issues have been defined through previous investigations along the project alignment, remedial costs related to these issues will be defined during additional pre-construction investigations, once the project alternative has been chosen and the soils, groundwater, and

buildings to be affected by the project are determined. The following discussion identifies these steps.

Identify/Eliminate Additional Areas of Concern Along Doyle Drive Alignment

A soil investigation would be performed prior to project construction to determine if aerially deposited metals from vehicle exhaust and viaduct coating have affected shallow soils near Doyle Drive. Samples would be collected from surface soils in areas that will be disturbed during project construction. Soil samples would be analyzed for total lead and other contaminants of concern. Analytical results would be compared to cleanup levels established by the Trust in the *Revised Feasibility Study* (see Appendix C in the revised *Preliminary Site Investigation*, October 2004), the *Petroleum Contingency Plan* (Erler & Kalinowski, 2004), and the *The Development of Presidio-Wide Cleanup Levels for Soil, Sediment, Groundwater and Surface Water* (Erler & Kalinowski, 2002, commonly referred to as the "Presidio Cleanup Level Document"). Depending on the analytical results, special soil management and disposal procedures may be required, and/or additional construction worker health and safety procedures implemented during project construction.

Develop a Site Management Program/Contingency Plan

Prior to project construction, a *Site Management Program/Contingency Plan* (SMP/CP) would be prepared to address known and potential hazardous material issues during construction. The SMP/CP would include available data from environmental investigations and geotechnical borings from the project area, including areas of serpentinite bedrock that would be disturbed during construction. The SMP/CP would include measures to address management of contaminated soil and groundwater from known hazardous materials sites. For soils, the SMP/CP would include stockpile handling/management procedures, stockpile sampling methodology (including analytical methods, sampling frequency, and statistical analysis), and off-haul and reuse criteria. Reuse criteria will be those criteria developed by the Trust for the *Revised Feasibility Study*. For groundwater, the SMP/CP would describe groundwater storage and discharge requirements, which may include pre-treatment of dewatered groundwater and other permit requirements.

The SMP/CP would include a site-specific *Health and Safety Plan* (HASP) prepared by a qualified environmental professional. The HASP should include measures to protect construction workers and the general public by including engineering controls, monitoring, and security measures to prevent unauthorized entry to the construction area, and reduce hazards outside it. If prescribed exposure levels would be exceeded, personal protective equipment will be required for workers in accordance with California Division of Occupational Safety and Health (DOSH) regulations.

The SMP/CP would also address the possibility of encountering unknown contamination or buried hazards and include procedures to protect workers and

the public. This portion of the SMP/CP would be similar in scope to the *Petroleum Contingency Plan* prepared by the Trust, and would include procedures for addressing both petroleum and non-petroleum contaminants. The SMP/CP would also include emergency procedures for accidental releases of hazardous materials used or stored during construction.

Identify Potential Serpentinite Bedrock Disturbance Areas

Prior to project construction, previously-prepared geotechnical reports and boring and trenching logs from the site would be reviewed to identify areas of serpentinite bedrock that will be disturbed during project construction. An *Asbestos Dust Mitigation Plan* would be prepared and submitted to BAAQMD, in accordance with the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. The *Asbestos Dust Mitigation Plan* would include Best Management Practices (BMPs) to minimize dust during grading and other earthmoving operations. BAAQMD would also be notified at least fourteen days prior to construction activities at the site.

Identify Groundwater Dewatering Areas and Develop Testing/Treatment Protocol

During geotechnical examinations, in areas slated for dewatering, groundwater samples would be tested for hexavalent chromium, petroleum hydrocarbons, and possibly other contaminants. When groundwater dewatering is required during project construction, a permit from SFRWQCB and/or the San Francisco Public Utilities Commission (SFPUC) would be required. Permit conditions could potentially include discharge volume limits, discharge mass limits for specific contaminants, and/or pre-treatment of groundwater prior to discharge. Dewatering near Halleck Street prior to the completion of remediation in the Building 207/231 area may require a water treatment system to remove organic compounds related to historic releases in that area.

Project construction would use techniques to minimize the amount of groundwater dewatering; therefore, the limited dewatering performed during construction would not create long-term changes in groundwater flow direction or velocity and would not be expected to drastically affect other areas of groundwater contamination at the Presidio.

Identify Building and Demolition Hazards

Prior to demolition of buildings for project construction, a lead-based paint survey and asbestos-containing materials survey would be conducted. Identified lead and asbestos would be abated in accordance with applicable regulations. All lead and asbestos abatement activities must be conducted by trained workers under direction of an appropriate health and safety plan to minimize potential exposure. Soils near structures potentially affected by lead-based paint would be investigated and remediated, if warranted, in accordance with the Presidio lead-based paint in *Soil Plan*.

Coordinate Construction with Ongoing Remediation Actions

All construction activities would be coordinated with the Trust to ensure that project development does not affect on-going investigation and/or remediation of hazardous materials sites. For those sites where Caltrans is not the responsible party (i.e., CERCLA or petroleum contamination sites at the Presidio where the Army has been identified as the responsible party), and avoidance of the site is not possible, Caltrans' policy is to "make every effort to have the owner and/or responsible party investigate and cleanup the contamination prior to acquisition" (*Caltrans Project Development Procedures Manual*, Chapter 8, Article 1).

The Presidio Trust represents that under its 1999 agreement with the Army, the Presidio Trust is responsible for remediating known contamination related to historic Army land uses at certain enumerated sites. Any further remediation actions will be carried out by the responsible parties as required by appropriate regulatory authorities.

Estimated costs for management of serpentinite range from \$2.6 million (Alternative 2) to \$3.2 million (Alternative 5). ADL remediation costs for either alternative will be approximately \$7.124 million.

3.3.4 Air Quality

This section presents a summary of air quality conditions within the existing Doyle Drive Project study area. Detailed information regarding methodology and findings can be found in the *South Access to the Golden Gate Bridge: Doyle Drive Project Revised Air Quality Study*, November 2004.

Regulatory Setting

The *Clean Air Act* as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the *California Clean Air Act* of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called *National Ambient Air Quality Standards* (NAAQS). Standards have been established for carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃) and particulate matter (PM₁₀ and PM_{2.5}). These standards are shown in **Exhibit 3-45** (on the following page).

Under the *1990 Clean Air Act Amendments*, the U.S. Department of Transportation (USDOT) cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to the *Clean Air Act* requirements. Conformity with the *Clean Air Act* takes place on two levels: at the regional and project level. The proposed project must conform at both levels to be approved.

The California Clean Air Act (CCAA), which became effective on January 1, 1989, provides a planning framework for attainment of California Air Quality