

EXECUTIVE SUMMARY
ENVIRONMENTAL INVESTIGATIONS CONDUCTED BY BASELINE
ENVIRONMENTAL CONSULTING: OCTOBER 2008 – MAY 2010
Presidio Parkway (Doyle Drive Replacement) Project
07 July 2010

OVERVIEW

The Presidio Parkway Project (“Project”), formerly known as the Doyle Drive Replacement Project, includes reconstruction of approximately 1.5 miles of Doyle Drive from the Golden Gate Toll Plaza to the Palace of Fine Arts. The Project is located on federal land within the Presidio of San Francisco, under the jurisdiction of the Presidio Trust. Project activities include construction of a Presidio viaduct, multiple retaining walls, an undercrossing to be installed in artesian groundwater conditions, and excavation of two tunnels. The *Final Environmental Impact Statement/Report* (“FEIS/R”)¹ for the project was certified by the San Francisco County Transportation Authority (“SFCTA”) and the *Record of Decision*² was signed by the Federal Highway Administration in December 2008.

The SFCTA and California Department of Transportation (“Caltrans”) have issued contracts for Phase I of the Project (Contracts 1 through 4). Phase 1 construction was initiated in December 2009. Phase 2 design was terminated with 35 percent design drawings completed, and remaining design and construction will be completed under a Public/Private Partnership (“P3”) agreement. The limits of Phase 1 and Phase 2 are shown on Figure 1.

The purpose of this Executive Summary of environmental investigations conducted by BASELINE Environmental Consulting (“BASELINE”) is to support the P3 bid process, which is currently in progress. This document provides an overview of the scope of environmental studies already performed, and directs the reader to resources available for review. This document does not provide a summary of study results. A brief discussion of background environmental studies discussed in the FEIS/R is provided, followed by a description of environmental studies performed by BASELINE for the Arup/PB Joint Venture (“JV”) within the proposed Doyle Drive alignment area after adoption of the FEIS/R.

BACKGROUND

The project is located in the Presidio, which was a military installation until 1994. Due to the types of land uses and facilities operated at the Presidio in the past, hazardous materials have been released and these materials have affected soil and groundwater quality in some locations. A number of hazardous materials sites have been identified within the project area. Multiple

¹ Federal Highway Administration, San Francisco Transportation Authority, Caltrans, et al., 2008, *South Access to the Golden Gate Bridge-Doyle Drive Final Environmental Impact Statement/Report and Final Section 4(F) Evaluation*, September.

² U.S. Department of Transportation, Federal Highway Administration, 2008, *Record of Decision, South Access to the Golden Gate Bridge – Doyle Drive Project, San Francisco, California*, December.

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environmental investigations were conducted during the base closure process by the U.S. Army. Responsibility for environmental cleanup for contamination related to historic Army operations was transferred to the Presidio Trust in a May 1999 agreement. Contamination associated with other sources, such as the Doyle Drive roadway, were not included in that agreement.³

A summary of potential sources of contamination within the Project construction limits is presented in the FEIS/R.⁴ Thirty-four sites associated with hazardous materials were identified within the projected construction limits in the Project's *Preliminary Site Investigation* ("PSI") in 2004.⁵ The PSI was reviewed, and the ten sites determined to have the greatest potential to impact the Project are summarized in the FEIS/R. These documents are available at the administrative library for the FEIS/R, located at the SFCTA office in San Francisco. They are also available online at www.presidioparkway.org.

BASELINE Reports

BASELINE performed multiple studies for the project after adoption of the FEIS/R and prior to construction, including the following:

- pre-excavation soil waste classifications;
- groundwater elevation monitoring for mitigation planning;
- groundwater investigations in support of the draft Non-Storm Water Information Package ("NSWIP");⁶
- groundwater sampling for CDSM/CIDH testing; and
- aquifer characterization for design assistance.

These studies are described below, and study locations are shown on Figures 2 and 3.

Pre-Excavation Soil Waste Classification: Soil Sampling and Analysis near Proposed Doyle Drive Alignment

From 2008 to 2009, BASELINE performed three investigations to classify discrete soil waste streams that will be generated during excavation along the Project alignment.^{7,8,9} The purpose of these investigations was to pre-characterize soils to be excavated and provide supporting data for

³ Federal Highway Administration, San Francisco Transportation Authority, Caltrans, et al., 2008, *South Access to the Golden Gate Bridge-Doyle Drive Final Environmental Impact Statement/Report and Final Section 4(F) Evaluation*, September, Section 3.3.3, Hazardous Waste/Materials.

⁴ Ibid.

⁵ BASELINE and SFCTA, 2004, *South Access to the Golden Gate Bridge, Final Preliminary Site Investigation*, October.

⁶ Caltrans, 2009, *Draft Non-Storm Water Information Package, Contract 04-163744, Doyle Drive Project*, October 19.

⁷ Arup PB Joint Venture, 2009a, *Doyle Drive Replacement Project, Environmental Soil Investigation, Contract 3*, prepared by BASELINE, 23 June.

⁸ Arup PB Joint Venture, 2009b, *Doyle Drive Replacement Project, Environmental Soil Investigation, Contract 4*, prepared by BASELINE, 28 August.

⁹ Arup PB Joint Venture, 2010a, *Doyle Drive Replacement Project, Environmental Soil Investigation, Eastern Alignment*, prepared by BASELINE, 9 June.

future evaluation of reuse options; preparation of soil management plans; and identification of worker health and safety requirements.

- The *Environmental Soil Investigation, Contract 3* report (“Contract 3 Report”) included the western portion of the alignment and the Presidio viaduct area (Figure 2), effectively including both the Phase 1 and 2 areas.¹⁰
- The *Environmental Soil Investigation, Contract 4* report (“Contract 4 Report”) included the north- and south-bound Battery Tunnel area (Figure 2), effectively including both the Phase 1 and 2 areas.¹¹
- The *Environmental Soil Investigation, Eastern Alignment* report (“Eastern Alignment Report”) addressed the eastern portion of the project (Figure 2), including the Main Post Tunnel, effectively covering the remainder of the Phase 2 area.¹²

Soil sampling documented in the Contract 3, 4, and Eastern Alignment Reports was conducted in accordance with a *Soil and Groundwater Sampling Work Plan* (“Workplan”).¹³ The Workplan was reviewed and accepted by the Presidio Trust and they issued a *License to Enter and Conduct Geotechnical Investigations, Modification No. 2*.¹⁴

Boreholes were installed about every 200 feet along the entire corridor, for a total of 133 borings. Borings were drilled to the depth of the planned excavation in proposed cut areas, and to a depth of 2.5 feet in proposed fill areas based on a Caltrans recommendation. Soil sampling locations and depths were based on the most current Caltrans/JV maps and cross-sections available at the time the Workplan was prepared.

Eighteen composite areas were designated based on contiguous proposed cut or fill areas, and soil within each composite area was grouped into subsets based on lithology (or potential waste stream). Soil samples within each composite area subset were composited for analysis of all compounds with the Presidio Trust clean-up criteria. Discrete soil samples in the upper 2.5 feet were analyzed for total lead and for soluble lead if total lead exceeded threshold concentrations. Composite area boundaries, soil subsets, and analytical results are presented in the soil investigation reports.

The analytical data were entered into an Access database, and the data were evaluated statistically for comparison with screening criteria. The data showed that the upper 2.5 feet in some portions of the alignment and all the serpentinite bedrock would be a California hazardous waste once excavated while soils below a depth of 2.5 feet, with the exception of serpentinite

¹⁰ Arup PB Joint Venture, 2009a, op. cit.

¹¹ Arup PB Joint Venture, 2009b, op. cit.

¹² Arup PB Joint Venture, 2010a, op. cit.

¹³ Caltrans and Arup PB Joint Venture, 2008, *Doyle Drive Replacement Project, License to Enter and Conduct Geotechnical Investigations, Exhibit No. 3, Soil and Groundwater Sampling-Work Plan*, October.

¹⁴ Presidio Trust, 2008, *Doyle Drive Replacement Project, License to Enter and Conduct Geotechnical Investigations, Modification No. 2*, 17 November.

bedrock, would be a non-hazardous waste once excavated. None of the soil subsets were identified as a federal RCRA waste.

A non-federal, California hazardous waste may be disposed of at a Class I landfill in California, or an out-of-state landfill permitted to accept such waste. Non-hazardous wastes are generally accepted at Class II and Class III landfills in California, depending on the individual landfill's permit.

Preliminary comparison of non-hazardous soil analytical results to California Regional Water Quality Control Board, San Francisco Bay Region ("Water Board") environmental screening levels ("ESLs") for commercial/industrial and residential land uses as well as ESLs for construction worker exposure¹⁵ was presented in each of the Contract 3, 4, and Eastern Alignment Reports to support future evaluation of possible off-site reuse options and worker health and safety requirements. A more detailed statistical evaluation and comparison of soil subsets with ESLs were completed at the request of Caltrans for the Contract 4 area.¹⁶ Some soils were also evaluated for reuse within the Presidio by comparing soil analytical results to the Presidio Trust clean-up levels¹⁷ for specific ecological and human health zones of the Presidio.¹⁸

Pre-Excavation Soil Waste Classification: Soil Sampling and Analysis around Buildings Proposed for Demolition

Shallow soil sampling around eleven buildings proposed for demolition was requested by Caltrans. The purpose of the sampling was to evaluate if lead paint or other chemicals associated with previous uses of the buildings were present in shallow soil adjacent to the buildings at concentrations that would require special handling or remediation, if soil was excavated.

Soils around four of the eleven buildings had been previously sampled by Presidio Trust (Buildings 106, 230, 606, and 1158). Soils around Building 205 were not evaluated because of the presence of concrete. Building 231 had already been removed and the foundations and surrounding soil will be removed as part of remedial action by the Presidio Trust. Soils around Building 670 were sampled by BASELINE for the JV, and results are included in the Contract 3 Report.¹⁹ Sampling of soils around the remaining four buildings (Buildings 201, 204, 228, and 605) was conducted in October and November 2009, and a report of those results is in preparation.

The scope of work for classification of soil around buildings was developed in coordination with the Presidio Trust and Caltrans, and work was completed in accordance with the Presidio Trust's

¹⁵ California Regional Water Quality Control Board ("Water Board"), San Francisco Bay Region, 2008, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final*, May.

¹⁶ Arup PB Joint Venture, 2010b, *Doyle Drive Replacement Project, Comparison of Soil Proposed for Excavation with Water Board Environmental Screening Levels, Contract 4*, prepared by BASELINE, January 21.

¹⁷ Erler & Kalinowski, Inc. ("EKI"), 2002, *Development of Presidio-Wide Cleanup Levels for Soil, Sediment, Groundwater, and Surface Water*, 30 October.

¹⁸ Arup PB Joint Venture, 2009c, *Doyle Drive Replacement Project, Soil Reuse Proposal, Contract 3*, prepared by BASELINE, October 9.

¹⁹ Arup PB Joint Venture, 2009a, op. cit.

Presidio-Wide Lead-Based Paint in Soil Investigation Workplan (“LBP Workplan”).²⁰ Analytical results will be screened against the Presidio Trust Cleanup goals for lead-based paint, which were developed by the Presidio Trust for each building. These cleanup goals represent the maximum lead concentrations in soil considered by the Presidio Trust to be protective of human health and the environment. Sites with sample results above the cleanup goals will require implementation of additional soil management activities, as described in the LBP Workplan. Excavated soil with lead concentrations above these goals may not be reusable at the Presidio.

Initial results indicate some discrete soil samples are above the Presidio Trust’s cleanup goals for lead-based paint and California hazardous waste criteria. Statistical evaluation of the results to evaluate if representative soil concentrations in specific depth zones exceed the Presidio Trust’s cleanup goals or California hazardous waste criteria is under preparation.

Groundwater Elevation Monitoring for Mitigation Planning: West Crissy Bluffs

A portion of the Project will upgrade Doyle Drive near a biologically sensitive area within the West Crissy Bluffs (Figure 1). Doyle Drive will be placed within a new tunnel south of the West Crissy Bluffs and north of the San Francisco National Cemetery. Tunneling may alter or disrupt groundwater flows to the bluffs, and as a result, potentially impact existing wetland plants that rely on the groundwater. Therefore, the FEIS/R required development and implementation of a hydrogeologic and biological monitoring program to evaluate potential indirect impacts to the hydrogeology and dependent biological resources. This program is described in the FEIS/R and the *Natural Environmental Study* appended to the FEIS/R,²¹ and requires monitoring for one year prior to construction to establish baseline conditions, and continued monitoring for at least five years after completion of the project. A *Long-Term Vegetation and Groundwater Monitoring Plan* has been prepared in response to the long-term monitoring requirement, and proposes quarterly monitoring for five years.²²

Pre-construction groundwater elevation monitoring was conducted monthly by BASELINE from June 2008 through May 2009 to establish baseline groundwater conditions. Monitoring frequency was modified to a quarterly basis in August 2009. Groundwater elevations were measured manually in eighteen piezometers upgradient of the West Crissy Bluffs (Figure 3). Eight of these piezometers were also equipped with automated water level measuring devices, referred to as “pressure transducers” or “transducers,” to measure hourly groundwater elevation changes. Results were reported in the *Annual Report on Pre-construction Groundwater Elevation Monitoring*.²³

²⁰ Presidio Trust, 2008, *Presidio-Wide Lead-Based Paint in Soil Investigation Work Plan*, October.

²¹ Federal Highway Administration, San Francisco Transportation Authority, Caltrans, et al., 2008, op cit.

²² ESA, 2009, Doyle Drive West Crissy Bluffs, *Long-Term Vegetation and Groundwater Monitoring Plan*, July.

²³ Arup PB Joint Venture, 2009d, *Doyle Drive Replacement Project, Annual Report on Pre-Construction Groundwater Elevation Monitoring, West Crissy Bluffs, June 2008 through August 2009*, prepared by BASELINE, 23 December.

Groundwater Investigations in Support of NSWIP

The Project includes excavation below the existing groundwater levels. In some areas, dewatering of these excavations would be required for project constructability and worker safety. BASELINE was requested to pre-characterize groundwater quality to provide data for the development of options for dewatering effluent management prior to excavation. In September 2009, groundwater from seven West Crissy Bluff piezometers was sampled and analyzed for a suite of common chemical contaminants and physical parameters relevant to sewer and storm water discharge limitations; in addition, a review of existing groundwater data from a subset of the Presidio Trust monitoring wells was conducted. Analytical results were compared to various screening levels and thresholds requested by Caltrans, including the Water Board ESLs, drinking water standards, and the Water Board general waste discharge requirements.²⁴ Analytical results were presented in the *Final Environmental Groundwater Investigation* report (“EGIR”).²⁵

The Presidio Trust maintains a database of environmental groundwater data collected from Presidio monitoring wells. Many of these monitoring wells are periodically sampled as part of on-going investigations of historic releases of environmental contaminants. BASELINE identified 43 Presidio Trust monitoring wells located in proximity to areas that may be excavated for the Project (and therefore in areas where dewatering may be required). The most recent data available from these 43 monitoring wells were presented in the *Final Environmental Groundwater Investigation* report. Presidio-wide quarterly groundwater monitoring program reports are available on the *Presidio Trust Environmental Remediation Document Library* website,²⁶ and the groundwater database can be obtained from the Presidio Trust.

Presidio Trust monitoring well data presented in the EGIR were further evaluated in the *Supporting Documentation Memorandum for Draft Non-Storm Water Information Package*.²⁷ This document was submitted to Caltrans and the National Park Service by the JV to support their evaluation of construction dewatering discharge options. Statistical characteristics of the data set required by a *Water Board General Waste Discharge NPDES Permit Notice of Intent* form²⁸ were also submitted, along with other Water Board permits that could be relevant for construction dewatering discharge.

Groundwater Sampling for CDSM/CIDH testing

The Project would include ground improvement of the subsoils below the Main Post Tunnel and Girard Road. A prototype field test of ground improvement using concrete deep soil mixing (“CDSM”) methods was conducted by Caltrans with the assistance of the Arup/PB Joint Venture

²⁴ California Regional Water Quality Control Board, 2006, *General Waste Discharge Requirements*, Order No. R2-2006-0075, NPDES No. CAG912002.

²⁵ Arup/PB Joint Venture, 2009e, *Doyle Drive Replacement Project, Final Environmental Groundwater Investigation*, prepared by BASELINE, 16 December.

²⁶ Presidio Trust Environmental Remediation Document Library website: <http://www.presidiotrust.gov/environmental/docs>

²⁷ Arup/PB Joint Venture, 2009f, *Doyle Drive Replacement Project, Supporting Documentation Memorandum for Draft Non-Storm Water Information Package*, prepared by BASELINE, 16 December.

²⁸ California Regional Water Quality Control Board, 2006, op. cit.

in January 2010 to evaluate the effectiveness of these treatment methods. The Presidio Trust and National Park Service required installation of a monitoring well downgradient of the prototype field test area, and groundwater sampling before and after the soil mixing activities to provide a preliminary evaluation of the effect on groundwater quality downgradient of the prototype field test area. BASELINE installed and sampled the required monitoring well. The results are presented in the *Doyle Drive CDSM/CIDH Prototype Field Test Program – Monitoring Well Installation and Sampling* report.²⁹

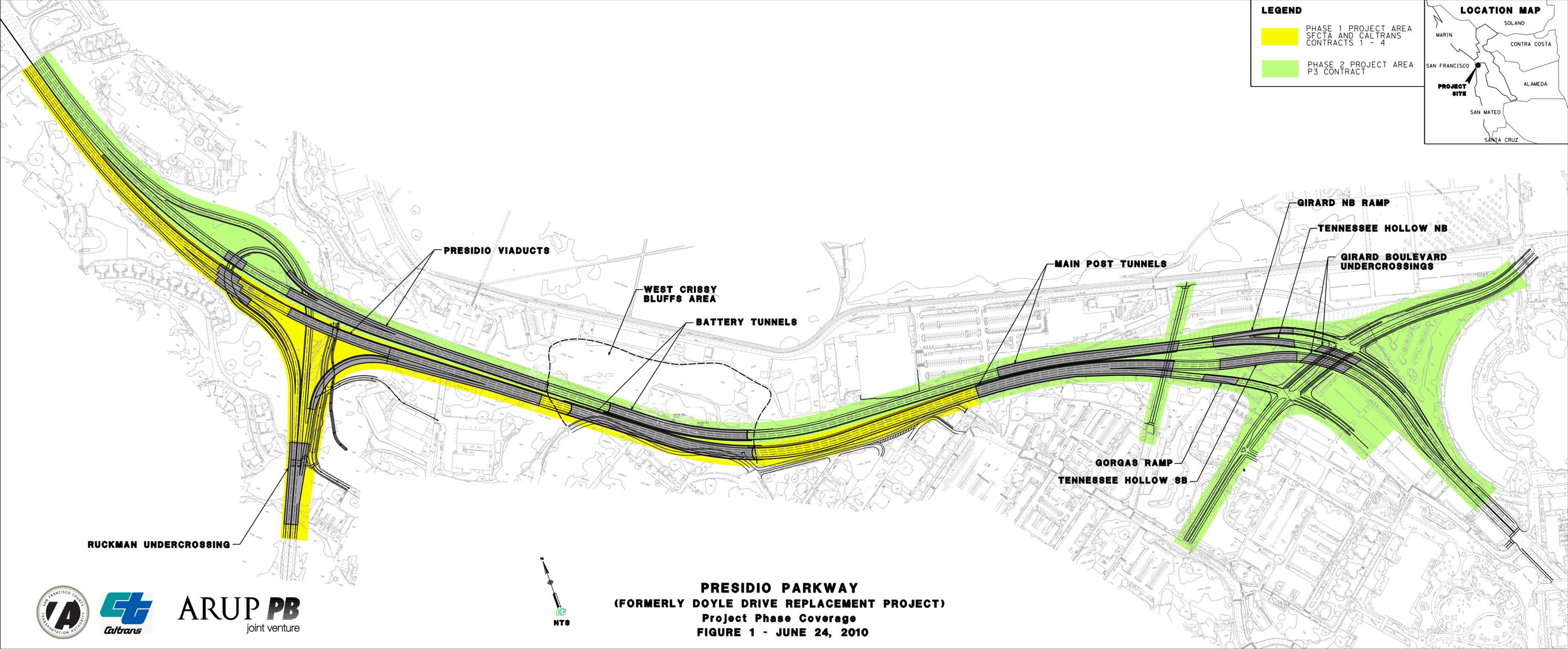
Aquifer Characterization for Design Assistance

Aquifer testing was conducted at the request of Caltrans in the proposed Girard Road undercrossing area (Figure 1) in November 2008. Testing was conducted to support the design team's estimates of the quantity of groundwater that may need to be pumped during dewatering activities associated with construction of the depressed section of Girard Road.

The aquifer testing included installation of a six-inch diameter well, constant-rate pumping and step-drawdown testing of that well with monitoring of up to eighteen observation wells, and slug tests at six monitoring wells. The objectives of the aquifer test program were to determine: 1) the aquifer properties of the uppermost water-bearing zone and the deeper confined zone with artesian pressures; 2) whether the local groundwater conditions are affected by tidal fluctuations in the Bay; and 3) to further characterize the multi-layer aquifer system (e.g., defining heterogeneities, leaky aquitards). The results of the testing were presented in the *Final Report, Aquifer Testing, Doyle Drive Replacement Project*.³⁰

²⁹ Arup/PB Joint Venture, 2010c, *Doyle Drive Replacement Project, CDSM/CIDH Prototype Field Test Program – Monitoring Well Installation and Sampling*, 19 May, prepared by BASELINE.

³⁰ Arup/PB Joint Venture, 2009g, *Doyle Drive Replacement Project, Final Report, Aquifer Testing, Presidio, San Francisco, California*, prepared by BASELINE, 23 July.



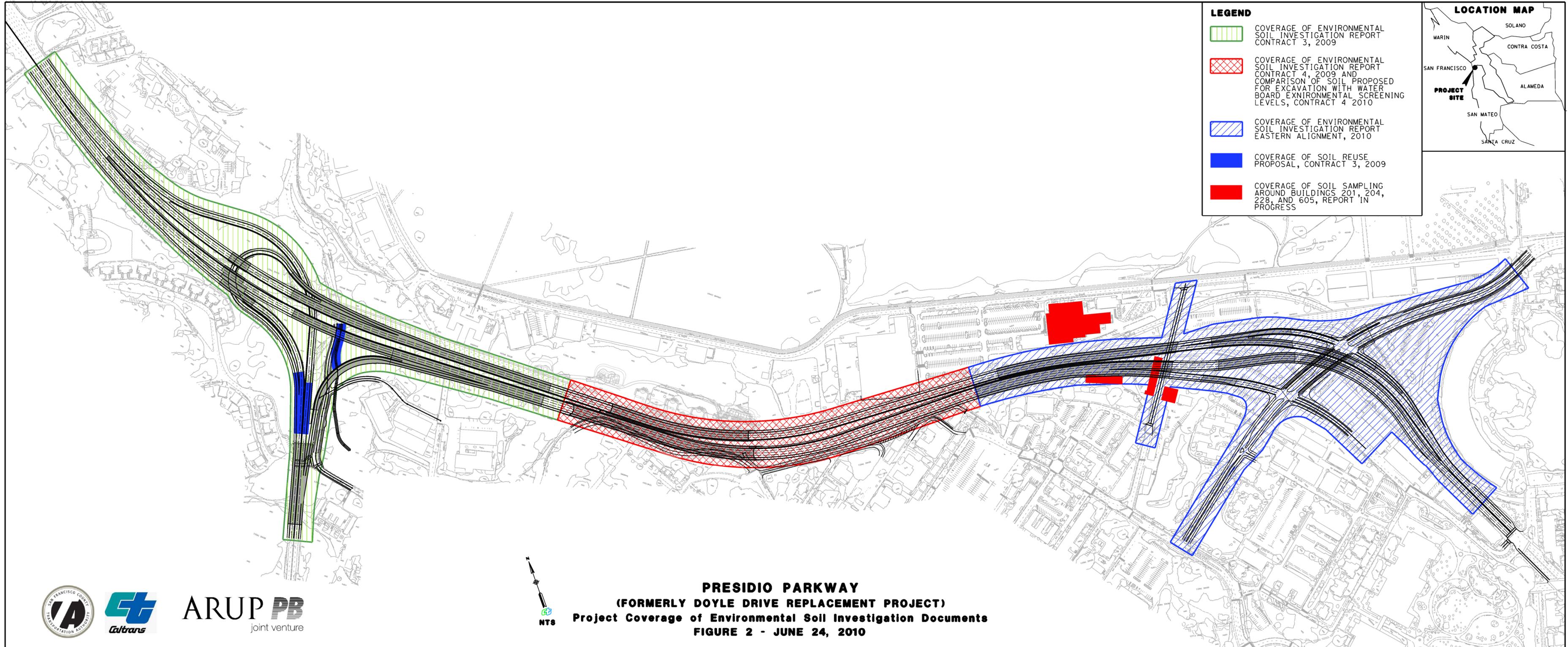
LEGEND

- PHASE 1 PROJECT AREA
SFTA AND CALTRANS
CONTRACTS 1 - 4
- PHASE 2 PROJECT AREA
P3 CONTRACT

LOCATION MAP



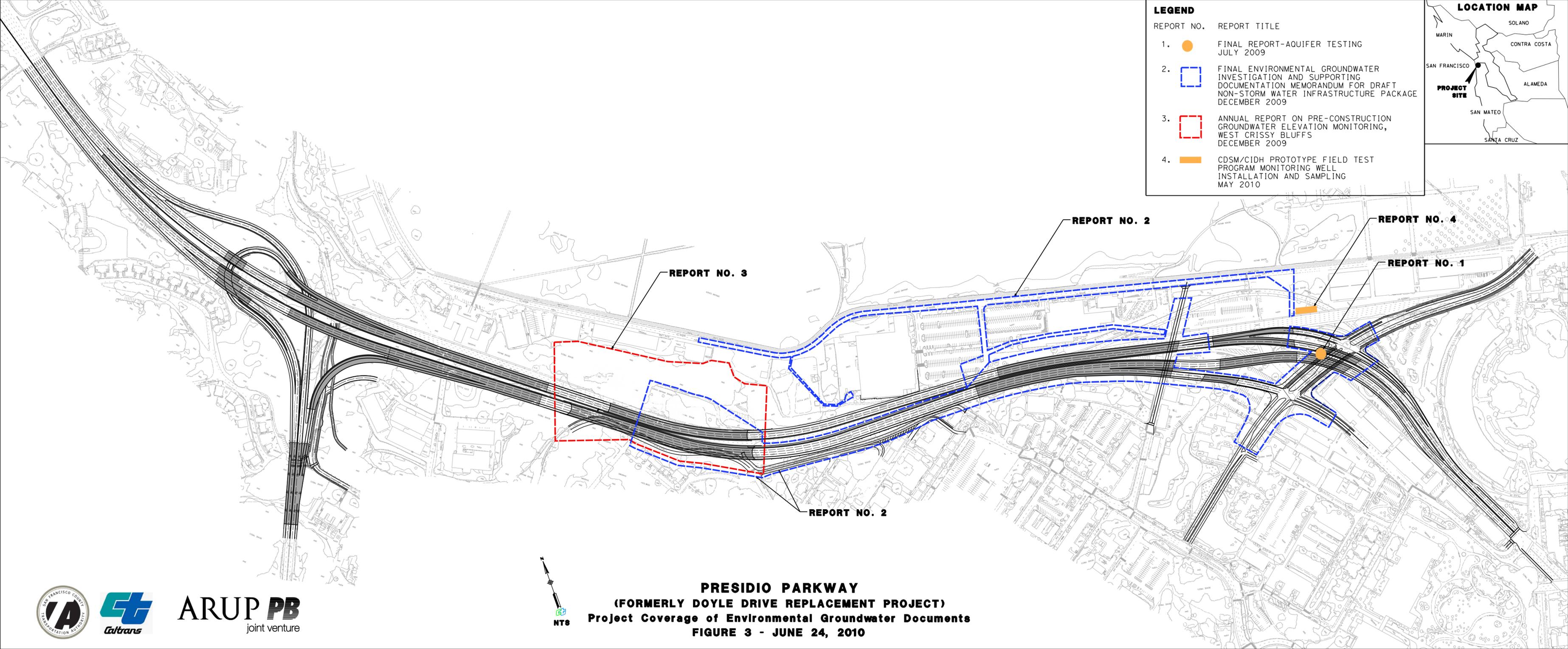
**PRESIDIO PARKWAY
(FORMERLY DOYLE DRIVE REPLACEMENT PROJECT)
Project Phase Coverage
FIGURE 1 - JUNE 24, 2010**



ARUP PB
 joint venture



PRESIDIO PARKWAY
 (FORMERLY DOYLE DRIVE REPLACEMENT PROJECT)
 Project Coverage of Environmental Soil Investigation Documents
FIGURE 2 - JUNE 24, 2010



LEGEND

REPORT NO.	REPORT TITLE
1. ●	FINAL REPORT-AQUIFER TESTING JULY 2009
2. □	FINAL ENVIRONMENTAL GROUNDWATER INVESTIGATION AND SUPPORTING DOCUMENTATION MEMORANDUM FOR DRAFT NON-STORM WATER INFRASTRUCTURE PACKAGE DECEMBER 2009
3. □	ANNUAL REPORT ON PRE-CONSTRUCTION GROUNDWATER ELEVATION MONITORING, WEST CRISSY BLUFFS DECEMBER 2009
4. —	CDSM/CIDH PROTOTYPE FIELD TEST PROGRAM MONITORING WELL INSTALLATION AND SAMPLING MAY 2010



**PRESIDIO PARKWAY
(FORMERLY DOYLE DRIVE REPLACEMENT PROJECT)
Project Coverage of Environmental Groundwater Documents
FIGURE 3 - JUNE 24, 2010**