SUPPLEMENTAL PROJECT INFORMATON HANDOUT

2. FINAL PRELIMINARY SITE INVESTIGATION (AERIALLY-DEPOSITED LEAD INVESTIGATION)

PRELIMINARY SITE INVESTIGATION WORKPLAN

MARCH 2017

MATHILDA AVENUE IMPROVEMENTS AT SR 237 AND US 101 PROJECT

04-SCL-237 PM 2.7/3.3; SCL-101 PM 45.2/45.8
EA 04-4H2901/PROJECT ID 0413000204

FOR:
Santa Clara Valley
Transportation Authority

15305-00.02512

BASELINE ENVIRONMENTAL CONSULTING
5900 Hollis Street, Suite D, Emeryville, CA 94608 | P: (510) 420-8686 | www.baseline-env.com

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1. INTRODUCTION

The State of California, Department of Transportation (Caltrans), in cooperation with the Santa Clara Valley Transportation Authority (VTA) and the City of Sunnyvale, is proposing the "Mathilda Avenue Improvements at SR 237 and US 101 Project" (Project) to improve Mathilda Avenue in the City of Sunnyvale from Almanor Avenue/Ahwanee Avenue to Innovation Way, including on- and off-ramp improvements at the State Route (SR) 237/Mathilda Avenue and U.S. Highway 101 (US 101)/Mathilda Avenue interchanges. On SR 237, the Project limits are from 0.3 mile east of the US 101/SR 237 interchange (post mile [PM] 2.7) to 0.3 mile east of the Mathilda Avenue Undercrossing (PM 3.3). On US 101, the Project limits are from 0.5 mile south of the Mathilda Avenue Overcrossing (PM 45.2) to 0.3 mile south of the SR 237/US 101 interchange (PM 45.8). The total length of the Project on Mathilda Avenue is approximately one mile (Figure 1). BASELINE Environmental Consulting (BASELINE), under subcontract to WMH Corporation, has prepared this Preliminary Site Investigation (PSI) workplan for the Project.

The purpose of this investigation is to determine whether contaminants of potential concern (COPCs) are present in soils and groundwater that would be encountered during Project construction. BASELINE will collect soil and groundwater samples, representative of those that will be disturbed during construction of the Project, and analyze them for COPCs. SCA Environmental, under subcontract to BASELINE, will perform a separate survey for asbestos and lead in the US 101 overpass structure and traffic striping paints. The analytical data from the PSI investigation will be used to classify affected soils and groundwater in accordance with applicable regulatory thresholds, including hazardous waste criteria, criteria from the soils management agreement between the Department of Toxic Substances Control (DTSC) and Caltrans for reuse of lead-contaminated soils (DTSC, 2016; Appendix A), and criteria from standard Caltrans specifications. Based on the findings of the investigation, recommendations will be made regarding worker health and safety and soil and groundwater management and disposal procedures that should be followed during Project construction.

2. PROJECT DESCRIPTION

The Project design features include reconfiguration of the US 101 and SR 237 interchanges with Mathilda Avenue. This includes modification to on- and off-ramps; removal, addition, and signalization of intersections, and provision of new left-turn lanes. In addition, the Build Alternative would require modification and construction of bicycle and pedestrian facilities,

utilities, storm water treatment facilities, street lighting, ramp metering, signage, retaining walls, and light rail crossing facilities as described. The Build Alternative would include the following design features:

- Moffett Park Drive between Bordeaux Drive and Mathilda Avenue would be removed and replaced with a Class I bikeway (as described below). Vehicular traffic would be shifted north to Bordeaux Drive and Innovation Way to access Mathilda Avenue. Innovation Way has been extended from Mathilda Avenue to Bordeaux Drive as part of the Moffett Place development project. Moffett Park Drive eastbound/westbound north of Mathilda Avenue would remain.
- The westbound SR 237 off-ramp would be realigned and widened to terminate opposite Moffett Park Drive (on the west side of Mathilda Avenue). The existing signalized intersections on Mathilda Avenue at the SR 237 westbound off-ramp and Moffett Park Drive would be removed.
- The reconfigured westbound SR 237 off-ramp/Moffett Park Drive intersection would be signalized. The westbound SR 237 on-ramp would be modified to intersect with Mathilda Avenue just south of the new signalized intersection. Mathilda Avenue northbound traffic bound for westbound SR 237 would make a U-turn movement at the new signalized intersection to access the on-ramp.
- Provide three continuous through lanes in each direction on Mathilda Avenue.
- Remove northbound US 101 loop off-ramp and shift traffic to northbound US 101 diagonal off-ramp.
- Realign and widen northbound US 101 ramps and signalize ramp intersection with Mathilda Avenue, and construct left-turn lane on southbound Mathilda Avenue to access northbound US 101 loop on-ramp.
- Realign southbound US 101 off-ramp and loop on-ramp and signalize ramp intersection with Mathilda Avenue.
- Modify Mathilda Avenue/Ross Drive signal intersection.
- Modify westbound SR 237 ramps to provide a diamond configuration.
- Rehabilitate existing roadway pavement on Mathilda Avenue and Moffett Park Drive within the project limits.
- Construct a new retaining wall and replace a portion of existing sound wall on retaining wall.
- Replace concrete barriers on the US 101/Mathilda Avenue Overcrossing.

3. BACKGROUND

An Initial Site Assessment (ISA) report prepared by BASELINE in October 2015 identified medium to low risks of soil and groundwater contamination from potential hazardous materials sources (BASELINE, 2015). Each of the potential contaminant sources are discussed below.

3.1 Aerially-Deposited Lead in Soil

Lead alkyl compounds were first added to gasoline in the 1920s. Beginning in 1973, the U.S. Environmental Protection Agency (USEPA) ordered a gradual phase out of lead from gasoline that significantly reduced the prevalence of leaded gasoline by the mid-1980s. Prior to the 1970s, the USEPA estimated that vehicles emitted approximately 75 percent of the lead consumed in leaded gasoline as particulate matter in the exhaust (DTSC, 2004). As a result, shallow soils within approximately 20 feet of the edge of pavement in highway corridors have the potential to be contaminated with aerially-deposited lead (ADL) from historical car emissions prior to the phase out of significant lead concentrations in gasoline (DTSC, 2016). Historical aerial photographs reviewed during the ISA for the Project show that intersections of US 101 and SR 237 with Mathilda Avenue were constructed in the late 1960s, which was before the full phase-out of lead in gasoline (BASELINE, 2015). Depending on the concentrations of lead in soils, special soil management and/or construction health and safety measures may be required during Project construction.

3.2 Agricultural Pesticides in Soil

Historical aerial photographs reviewed during the ISA for the Project show that the Project alignment was used for agriculture between 1939 and 1956 (BASELINE, 2015). Prior to 1950, inorganic pesticides that contained elevated concentrations of metals, such as arsenic, were commonly used in California agriculture. After 1950, organochlorine pesticides (OCPs) were commonly used in California agriculture until about the mid-1970s. Arsenic from inorganic pesticides and residues from OCPs used in the past have the potential to persist for many decades in shallow soils and can affect human health and the environment (DTSC, 2008). Therefore, pesticide residues could potentially be present in shallow soils at the Project site that could pose a health risk to construction workers and may require special soil management and disposal procedures.

3.3 Nonpoint-Source Metals in Soil

Metals from nonpoint runoff sources, such as urban developments, vehicle tires, and brake pads, can accumulate in drainage swales over time. Elevated concentrations of metals could be present in drainage swales at the Project site that could pose a health risk to construction workers and may require special soil management and disposal procedures.

3.4 Naturally-Occurring Asbestos in Soil

Geologic mapping reviewed for the ISA did not identify any deposits of naturally-occurring asbestos (NOA) at or near the Project site. However, previous Caltrans projects in Santa Clara County have identified NOA in soil imported for embankment fill. Therefore, asbestos could potentially be present in embankment fill materials at the Project site.

3.5 Groundwater Contamination

The ISA identified 11 hazardous materials release site of potential concern that may have impacted groundwater beneath the Project site (BASELINE, 2015). Dewatering of groundwater impacted by nearby hazardous materials release sites could pose a health risk to construction workers and may require special management and disposal procedures.

3.5.1 Regional Chlorinated Solvent Plume

The ISA identified seven hazardous materials release sites located south of US 101 and west of Mathilda Avenue associated with a regional groundwater plume(s) of chlorinated solvents. Chlorinated solvents from the regional plume(s) could potentially extend beneath the Project site near the entrance to the US 101 southbound off-ramp.

3.5.2 Leaking Underground Storage Tank Sites

The ISA identified three releases of petroleum hydrocarbons from leaking underground storage tanks. Groundwater plumes of residual petroleum hydrocarbons from the release sites may extend beneath the Project site near southern terminus of the Project, the US 101 southbound on-ramp, and the northern terminus of the Project.

3.5.3 Corrective Action Site

The ISA identified a potential release of solvents and metals from a former facility that manufactured printed circuit boards that the DTSC has listed as an inactive Corrective Action site requiring investigation. A groundwater plume of solvents and/or metals from the site could potentially extend beneath the Project site along Mathilda Avenue between SR 237 and US 101.

3.6 Lead-Based Paint and Asbestos-Containing Materials

The US 101 overpass structure on the Project site may be coated with lead-based paint and/or asbestos-containing materials. Modification of the concrete bridge barrier along the east side of the US 101 overpass structure for the Project could pose a risk of releasing lead particles and asbestos fibers into the environment (if present).

Lead chromate has been used in yellow thermoplastic and yellow paint for traffic striping and pavement markers for many years and as recently as 1996 in Caltrans District 4 where the Project is located. The residue that may be produced from the yellow thermoplastic and yellow paint during road improvement activities may contain lead and chromium concentrations that could produce toxic fumes when heated. The debris produced during the removal of yellow thermoplastic and yellow paint may need to be disposed of as a California and/or federal hazardous waste if the concentrations of lead or chromium exceed applicable hazardous waste thresholds for total or soluble concentrations of those metals.

3.7 Asphalt-Concrete and Portland-Cement Concrete

Grindings of asphalt concrete (AC) and Portland-cement concrete (PCC) have a relatively high pH and may contain metals and petroleum hydrocarbons that can impact stormwater runoff and threaten surface water bodies. In accordance with guidance from the Regional Water Board, Caltrans projects may reuse AC and PCC grindings as roadway sub-base, backfill material, and compacted surface in a maintenance/work yard (Regional Water Board, 2007). Non-road base reuse scenarios must be reviewed by the Regional Water Board on a case-by-case basis. Surplus AC and PCC grindings generated from Project implementation and not re-used along the Project alignment may be transported to an aggregate recycling facility or a construction and demolition waste disposal facility.

4. REGULATORY REQUIREMENTS

4.1 California and Federal Hazardous Waste Criteria

Soils containing concentrations of contaminants above State and/or Federal hazardous waste criteria would be classified as a hazardous waste, once excavated. The criteria for determining a California hazardous waste are stricter than the criteria established by the Federal Resource Conservation and Recovery Act (RCRA); however, both State and Federal hazardous waste regulations will be considered during data evaluation.

The California hazardous waste criteria are contained in the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, Section 66261 et seq. The primary COPC at the Project site is lead. There are two thresholds established by California's regulations for determining if soil contaminated with lead is a hazardous waste: the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC).

The TTLC for total lead is 1,000 milligrams per kilogram (mg/kg). The STLC for soluble lead is 5.0 milligrams per liter (mg/L) using the Waste Extraction Test (WET). Because the WET procedure for soluble lead introduces a 10:1 dilution, wastes containing greater than 50 mg/kg of total lead may theoretically exceed the STLC, depending on the percentage of the total lead that is solubilized by the WET procedure. Lead-containing materials that have total or soluble concentrations exceeding the TTLC or STLC, respectively, are classified as California hazardous waste and must be disposed of at a Class I hazardous waste disposal facility in California or an out-of-state landfill able to accept such waste.

The Federal RCRA regulations do not have a threshold for determining if lead-containing material is a hazardous waste based on total lead concentrations. Under the Federal RCRA regulations, material containing greater than 5.0 mg/L of soluble lead as determined using the Toxicity Characteristic Leaching Procedure (TCLP) is classified as hazardous waste. The TCLP method introduces a 20:1 dilution; therefore, wastes containing greater than 100 mg/kg of total lead may theoretically exceed the RCRA soluble lead threshold, depending on the percentage of the total lead that is solubilized by the TCLP procedure.

4.2 Caltrans-DTSC Soil Management for Aerially-Deposited Lead-Contaminated Soils Agreement

On 1 July 2016, Caltrans and DTSC entered into the Soil Management for Aerially-Deposited Lead-Contaminated Soils Agreement (Agreement). The Agreement supersedes previous ADL variances issued by DTSC which had been in effect since 1995, with renewals every 5 years. Under the Agreement, soils containing up to 3,200 mg/kg of total lead and up to 150 mg/L of soluble lead, using a modified WET procedure with deionized water as an extractant (WET-DI), can be reused at a site, subject to requirements of the Agreement. The Agreement is included as Appendix A of this report.

The Agreement requires ADL-contaminated soil to be adequately covered to prevent erosion and reduce water infiltration, in compliance with the standards shown in Table 1.

Table 1. Minimum Cover Requirements for ADL-Contaminated Soil

Minimum Cover Requirement	Total Lead Concentration		Soluble Lead Concentration
No cover requirement	Less than or equal to 320 mg/kg	And	Less than 5 mg/L (WET)
Pavement structure or one foot of clean soil[a]	Greater than 320 mg/kg but less than or equal to 1,600 mg/kg	Or	Greater than or equal to 5 mg/L (WET) and less than or equal to 1.5 mg/L (WET-DI)
Pavement Structure	Greater than 1,600 mg/kg but less than or equal to 3,200 mg/kg	Or	Greater than 1.5 mg/L (WET-DI) but less than or equal to 150 mg/L (WET-DI)
Subject to hazardous waste regulations	Greater than 3,200 mg/kg	Or	Greater than 150 mg/L (WET-DI)

[a] Clean soil is defined as soil not containing total lead over 80 mg/kg based on a 95 percent upper confidence limit or soluble lead over 5 mg/L (WET) based on a 95 percent upper confidence limit and not containing other constituents at levels that would pose an unacceptable risk to human health or the environment or be unacceptable to the Regional Water Quality Control Board with jurisdiction.

If ADL-contaminated soils are to be reused, the Agreement includes several additional provisions and restrictions, including the following:

- **Sampling and Analysis.** Soils proposed for reuse under the Agreement must be sampled and analyzed for total and soluble lead, and either the maximum concentrations or a statistical analysis using the 95 percent Upper Confidence Limit (UCL) must be used to determine potential reuse of soils.
- **Federal (RCRA) Hazardous Waste.** No reuse is permitted for soils exceeding 5.0 mg/L soluble lead by the TCLP method.
- **Notification.** Notification must be made to DTSC, the local Regional Water Quality Control Board (RWQCB), the local Air Quality District, and the local Certified Unified Program Agency (CUPA).
- **Acidic Soils.** All soils reused under the Agreement, and any cover soils, may not be acidic (defined as having pH less than or equal to 5.0).
- **Placement above Groundwater Table.** All soils reused under the Agreement must be placed at least 5 feet above the groundwater table.

- **Health and Safety.** Health and safety measures must be implemented for construction workers, including a lead compliance plan in accordance with CCR Title 8 Section 1532.1.

5. SAMPLING PLAN

Excavation depths and locations were determined using the 35% Design plans for the Project (WMH Corporation, 2016). Sampling locations are shown on Figures 2A through 2B. Sampling locations were chosen to collect representative samples of soils that will be disturbed during development of the Project. Sample locations may be adjusted based on physical constraints encountered in the field and/or safety considerations for the sampling personnel.

5.1 Aerially-Deposited Lead Soil Sampling Locations

Proposed ADL soil boring locations were chosen in areas where Project excavation would encounter exposed shallow soils for widening of roadways, construction of new retaining/sound walls, installation of overhead sign structures, and other construction activities at on-ramp and off-ramp locations (S01 through S20 on Figures 2A and 2B). Roadway widening activities will generally disturb soils within about 10 feet from existing pavement. Soil borings will be located within about 300 feet of each other in areas where exposed soils will be disturbed and the soil borings will be located within about 5 feet from the existing pavement.

Based on the analysis in the ISA, only shallow soils would have the potential to be contaminated with ADL. Therefore, three soil samples will be collected from each boring at 0.0 feet below ground surface (bgs), 1.0 foot bgs, and 2.0 feet bgs. A total of 60 soil samples will be collected from 20 boring locations.

5.2 Agricultural Chemical Soil Sampling Locations

Proposed agricultural chemical soil boring locations in the Project area were chosen based on the ISA findings, which indicated where former agricultural fields were located relative to areas that would be disturbed during Project construction (S01, S07, S16, and S17 on Figures 2A and 2B). At each location, one soil sample will be collected at 0.0 feet bgs. A total of four soil samples will be collected from four boring locations.

5.3 Nonpoint-Source Metals Soil Sampling Locations

Proposed nonpoint-source metals soil boring locations were chosen at Project excavation areas where drainage swales were observed from plan and aerial photograph review (S06 and S16 on Figures 2A and 2B). At each location, one soil sample will be collected at 0.0 feet bgs. A total of two soil samples will be collected from two boring locations.

5.4 Naturally-Occurring Asbestos Sampling Locations

Proposed NOA soil boring locations were chosen where Project excavation would disturb embankment fill materials (S03, S04, S12, and S13 on Figures 2A and 2B). At each location, one

soil sample will be collected beneath the top soil at about 1.5 feet bgs. A total of four soil samples will be collected from four boring locations.

5.5 Groundwater and Deep Soil Sampling Locations

Shallow groundwater may be encountered during installation of cast-in-drilled-hole (CIDH) piles to support a new sound wall and three overhead signs along the US 101 northbound off-ramp (Figure 2A). The ISA did not identify any groundwater contamination in the vicinity of the proposed sound wall and overhead signs; however, the chemical quality of soil cuttings and extracted groundwater that will be generated during installation of the CIDH piles will be characterized to determine proper management and disposal. Samples will be collected from boring S11 to represent soil and groundwater quality near the proposed sound wall and overhead sign at the end of the northbound US 101 off-ramp (Figure 2A). Samples will be collected from borings S21 and S22 to represent soil and groundwater quality at the two proposed overhead signs located near the northbound US 101 off-ramp (Figure 2A).

Soil borings will be drilled and sampled to a maximum depth of 40 feet bgs (the proposed depth of the CIDH piles) or until groundwater is encountered, whichever comes first. Soil samples will be collected at 5.0-foot depth intervals within observed fill materials (e.g., the fill embankment) and one sample will be collected from either the groundwater interface or the underlying native material. A total of three groundwater samples and approximately 16 soil samples (depending on the depth of observed fill materials) will be collected from the three boring locations.

5.6 Lead-Based Paint and Asbestos-Containing Material Survey

A lead and asbestos survey will be conducted by SCA Environmental concurrently with the field work performed for the PSI. The sampling will be performed by a Certified Site Surveillance Technician, under the direct supervision of a Certified Asbestos Consultant/Certified Industrial Hygienist. The survey is designed to collect and analyze representative samples of all paints, pavement striping, and structures that will be removed or modified during Project construction. The survey will include inspection to identify potential sources of lead based paint and asbestos containing materials on the concrete barriers for the US 101 overpass structure: up to 6 asbestos samples and 6 lead samples. No coring will be required; all sampling will be limited to materials on or close to the surface. Striping paints and guardrail paints in each area and up to 1 sample per mile of roadway will be sampled for total and leachable lead content. No polychlorinated biphenyl (PCB) sampling will be conducted. Expansion joints, if present, will be assumed to be potentially PCB-containing. Any suspect materials not accessible for sampling will be assumed to be asbestos-, lead-, or PCB-containing. A draft survey report presenting the observations, sampling results, laboratory reports, and quantity estimates will be prepared and submitted to WMH Corporation, VTA, and Caltrans for review. A final survey report will be prepared after receipt of comments.

6. SAMPLE COLLECTION METHODS

All field activities will be conducted in accordance with a site-specific health and safety plan and BASELINE's Quality Assurance Program Plan. These documents are included as Appendices B and C, respectively. Work will be performed by BASELINE field geologists and engineers, with assistance from Gregg Drilling and Testing, a California-licensed driller, and Hernandez Engineering, a California-licensed traffic control contractor. No drilling permits will be required from the Santa Clara Valley Water District because soil borings will not exceed a depth of 45 feet bgs.

Prior to field activities, all proposed sampling locations will be marked with white paint and Underground Service Alert would be contacted for utility clearance. BASELINE will meet with utility companies, upon request, to verify the locations of proposed borings relative to the underground utilities.

All work will be completed under the Caltrans Encroachment Permit for the project. Traffic control will be provided per City and Caltrans requirements. For soil boring locations along US 101 and the northbound off-ramp (S08, S09, S11, S21, and S22 on Figure 2A), shoulder lane closure will be required.

Samples will be collected and preserved in accordance with the latest edition of USEPA SW-846, Test Methods for Evaluating Solid Wastes, Physical and Chemical Methods. Sample locations will be recorded in the field using a hand-held GPS receiver.

6.1 Soil Sampling

Prior to obtaining surface samples, the location will be cleared of debris and/or vegetation. Surface soil samples will be collected using a slide hammer or a hollow-stem auger drilling rig equipped with a California-Modified sampler fitted with pre-cleaned stainless steel liners. After the sample is retrieved, the stainless steel liners will be sealed with Teflon film, plastic end caps, and sealed with silicone tape. The hand sampling equipment will be decontaminated between samples by scrubbing in an Alconox solution and rinsing in two sequential buckets of potable water. All drilling equipment that comes into contact with the subsurface soils will either be steam cleaned by the drilling contractor prior to use and/or decontaminated using Alconox solution and rinsing in two sequential buckets of potable water between samples.

Soil samples will be labeled and stored in a container cooled with ice immediately following collection. Each sample will be labeled with the project name, sample date, sampler initial, and unique sample identification.

6.2 Groundwater Sampling

At each groundwater sampling location, a boring will be completed to depth of groundwater using a hollow-stem auger drilling rig. Should groundwater not be encountered at a depth of 40 feet bgs, it will be assumed that groundwater at that location will not be encountered during Project construction and therefore no groundwater sample is required from that location.

Borings at all groundwater sampling locations will be continuously logged by the BASELINE field geologist or engineer using the Unified Soil Classification System.

A temporary well casing and screen will be installed in each soil boring. Grab groundwater samples will be collected from the temporary well screen using a low-flow peristaltic pump and disposable tubing or bailers. All drilling equipment that comes into contact with groundwater will be steam cleaned by the drilling contractor between samples.

Groundwater sample containers will be labeled and stored in a container cooled with ice immediately following collection. Each sample will be labeled with the project name, sample date, sampler initial, and unique sample identification.

6.3 Backfill and Cuttings/Rinsate Disposal

Shallow soil borings will be backfilled with soil cuttings. Deeper borings for groundwater samples will be backfilled with neat cement and the upper 6 inches will be filled with native soil. Decontamination water and any excess soil cuttings will be placed in properly labeled drums. Drums will be stored temporarily at a secured location designated by Caltrans. Following receipt of analytical results, cuttings and decontamination water will be disposed of or recycled in accordance with applicable regulations.

7. LABORATORY ANALYSES

The soil and groundwater samples will be transported to Curtis & Tompkins, a California-certified analytical laboratory, under proper chain-of-custody procedures. Each soil sample will be homogenized by the analytical laboratory prior to analysis. A portion of the soil samples selected for asbestos analysis will be sent to Micro Analytical Laboratories.

7.1 Aerially-Deposited Lead Soil Analyses

For the ADL sampling locations, the laboratory will collect an initial sample aliquot for each homogenized soil sample that has sufficient volume to analyze for total lead, WET lead, modified WET lead, and TCLP lead. This aliquot will be homogenized a second time prior to analysis. All soil samples will be analyzed for total lead by USEPA Method 6010. Soils with total lead concentrations greater than or equal to 50 mg/kg will be analyzed for soluble lead by WET method from the same parent aliquot. Soils with soluble lead concentrations by WET method greater than or equal to 5 mg/L will be analyzed for soluble lead by modified WET method (using deionized water as an extractant) from the same parent aliquot. Soil samples with lead concentrations greater than or equal to 100 mg/kg total lead and greater than or equal to 5 mg/L soluble lead by WET method will also be analyzed for soluble lead by TCLP method from the same parent aliquot. Six samples (ten percent of the total samples collected), selected with the assistance of a computer random number generator, will be analyzed for pH by USEPA Method 9045D.

7.2 Agricultural Chemical Soil Analyses

Discrete soil samples from locations near historical agricultural fields will be analyzed for OCPs (USEPA Method 8081) and total arsenic (USEPA Method 6010).

7.3 Nonpoint-Source Metals Soil Analyses

Discrete soil samples from drainage swales will be analyzed for Title 22 Metals (USEPA Method 6010/7000).

7.4 Naturally Occurring Asbestos Soil Analyses

Discrete soil samples from embankment fill materials will be analyzed for asbestos by Polarized Light Microscopy (CARB 435).

7.5 Groundwater and Deep Soil Analyses

Deep soil samples of fill materials collected at 5-foot intervals will be vertically composited from each drilled boring at the laboratory and analyzed for Title 22 Metals (USEPA Method 6010/7000). The deep soil sample collected at the groundwater interface or native materials from each drilled boring will be discretely analyzed for Title 22 Metals (USEPA Method 6010/7000). Groundwater samples will be analyzed for total extractable hydrocarbons and total volatile hydrocarbons by USEPA Method 8015M and volatile organic compounds by USEPA Method 8260.

7.6 Lead-Based Paint and Asbestos-Containing Material Analyses

Samples of asbestos-containing materials from the US 101 overpass structure will be analyzed by Polarized Light Microscopy with dispersion staining. Samples of lead-based paint from the US 101 overpass structure and traffic striping will be analyzed for total lead and soluble lead (as needed for waste characterization) by USEPA Method 6020.

8. DATA EVALUATION AND REPORTING

Analytical results will be compared to hazardous waste criteria, Caltrans-DTSC Agreement criteria for ADL-contaminated soils, and health and safety screening levels for construction workers. Regression analysis will be performed to compare the total lead and WET soluble lead results. If the correlation coefficient is less than 80 percent, samples will either be re-analyzed or justification for the low correlation will be provided. Statistical analysis of the total lead, soluble lead, and other results, if warranted, will be performed using the most recent version of USEPA's ProUCL software to estimate the one-sided 90 and 95 percent UCL of the arithmetic mean.

A draft report will be prepared for review by WMH, VTA, and Caltrans describing the sampling activities, the analytical results, and data evaluation. Laboratory reports, statistical analyses, and boring logs for the groundwater sampling locations will be included as appendices. Recommendations will be made on soil handling procedures to comply with applicable

regulatory requirements. If warranted, recommendations will also be made on follow-up investigations. Copies of the laboratory reports will be attached to the report for reference. A final report will be prepared after receipt of comments.

9. REFERENCES

BASELINE Environmental Consulting (BASELINE), 2015. Initial Site Assessment for the Mathilda Avenue Improvements at SR 237 and US 101 Project. October.

Department of Toxic Substances Control (DTSC), 2016. Agreement between DTSC and Caltrans In the Matter of Aerially Deposited Lead Contaminated Soils in State Highway Rights-of-Way, Docket No. ESPO-SMA 15/16-001. July.

Department of Toxic Substances Control (DTSC), 2008. Interim Guidance for Sampling Agricultural Properties (Third Revision). August 7.

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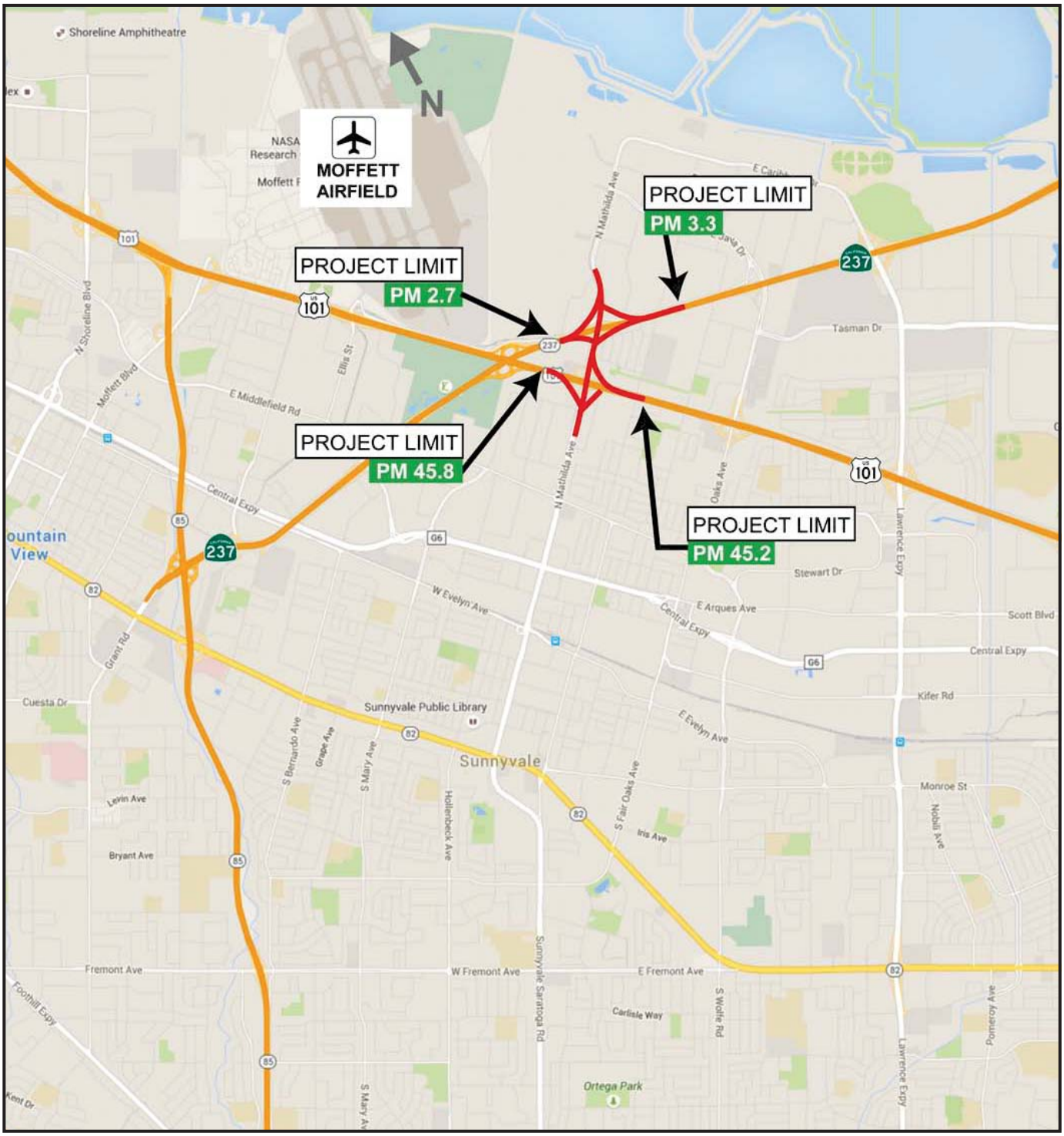
Regional Water Quality Control Board (RWQCB), 2007. California Department of Transportation Asphalt-Concrete and Portland Cement Concrete Grindings Reuse Guidance, letter, February 8.

WMH Corporation, 2016. Project Plans for Construction of the Mathilda Avenue Improvements at SR 237 and US 101 Project. 35% Plans. 17 November.

FIGURES

Project Location

Figure 1



Project Site

Source: WMH Corporation, 2017.

0 4,000 Feet

Mathilda Avenue Improvements at SR 237 and US 101 Project

BASELINE ENVIRONMENTAL CONSULTING

Proposed Sampling Locations

Figure 2A

Proposed Edge of Pavement/Sidewalk
Proposed Retaining/Sound Wall
Proposed Overhead Sign Location
Proposed Soil Boring Location

N

0 300 Feet

Mathilda Avenue Improvements at SR 237 and US 101 Project

BASELINE ENVIRONMENTAL CONSULTING

Proposed Sampling Locations **Figure 2B**

Proposed Edge of Pavement/Sidewalk
Proposed Retaining/Sound Wall
Proposed Soil Boring Location

N

0 300 Feet

BASELINE ENVIRONMENTAL CONSULTING

Mathilda Avenue Improvements at SR 237 and US 101 Project