2.2.5 Hazardous Waste/Materials

2.2.5.1 Regulatory Setting

Hazardous materials, including hazardous substances and wastes, are regulated by many state and federal laws. Statutes govern the generation, treatment, storage, and disposal of hazardous materials, substances, and waste, and also the investigation and mitigation of waste releases, air and water quality, human health, and land use.

The primary federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Resource Conservation and Recovery Act (RCRA) of 1976. The purpose of CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and welfare are not compromised. The RCRA provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include:

- Community Environmental Response Facilitation Act (CERFA) of 1992
- CWA
- Clean Air Act (CAA)
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

In addition to the acts listed above, EO 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and

cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

2.2.5.2 Affected Environment

This section has been prepared based on the analysis and findings presented in the *Initial Site Assessment* (February 2016).

The *Initial Site Assessment* (ISA) was prepared for the project to identify recognized environmental conditions (RECs) within and adjacent to the project site. According to the American Society for Testing and Materials (ASTM) E1527-13, a REC is defined as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

The following was conducted as part of the ISA: search of environmental databases, review of historical land uses, review of agency records, and site reconnaissance. Additional details for each of these items are provided below. The ISA identifies reported potential hazardous material conditions that may affect construction of the proposed project; however, the ISA does not provide a definitive determination of the actual presence or absence of contamination. In addition, no soil, groundwater, or hazardous waste/material testing was conducted for this project.

Environmental Database Search

A search of environmental databases was conducted using the Environmental Data Resources® DataMap™ Environmental Atlas™ database report (EDR report), the SWRCB Geotracker database, the Department of Toxic Substances Control (DTSC) Envirostor database, the Orange County Waste and Recycling database, and the State of California Department of Oil and Gas database. Based on the database search, the following three RECs were identified:

- I-405 SB at Von Karman Avenue – Potential historic diesel-contaminated soil within project footprint. According to the EDR report, a diesel spill occurred on December 11,

1990, along the shoulder of I-405 SB at Von Karman Avenue. The EDR report stated the spill was cleaned up, but no confirmation record of the cleanup was found.

- I-405 SB, South of Von Karman Avenue – Potential historic diesel-contaminated soil within project footprint. According to the EDR report, a diesel spill occurred on August 17, 1991, along the shoulder of I-405 SB, south of Von Karman Avenue. The EDR report stated the spill was cleaned up, but no confirmation record of the cleanup was found.
- I-405 NB Jamboree Road Off-Ramp – Potential historic gasoline-contaminated soil within project footprint. According to the EDR report, a gasoline spill occurred on October 5, 1991, along the I-405 NB Jamboree Road off-ramp, but no confirmation record of the cleanup was found.

Historical Land Uses

To determine the historical land uses within and adjacent to the proposed project, a review of available city directories, aerial photographs, topographic maps, and Sanborn Fire Insurance maps were conducted. Based on the review of historical data, the following three RECs were identified:

- Due to the I-405 freeway usage since the 1960s, it should be assumed that the near-surface soil in the unpaved areas of the freeway is affected by aerially deposited lead (ADL).
- Painted surfaces, such as yellow striping, might contain lead chromate; therefore, yellow thermoplastic and yellow painted freeway striping and pavement markings are suspect.
- Construction materials, including freeway structures, might contain asbestos-containing materials (ACM) and lead-based paint (LBP).

Agency Records Review

Agency records for APN 466-083-13 and APN 466-083-14, which will be partially acquired by the project, were requested from the Orange County Fire Authority, South Coast Air Quality Management District (SCAQMD), DTSC, and the Santa Ana RWQCB. Because a physical address could not be associated with APN 466-083-14, a file review request was only requested for APN 466-083-13. DTSC responded on August 21, 2015, and stated no records were available. No additional responses were received from the remaining agencies.

Site Reconnaissance

A site reconnaissance of the project site was conducted on August 12 and 21, 2015, to identify potential hazardous waste concerns. Based on the site reconnaissance, the following RECs were identified:

- High-voltage electrical wood power poles were identified within the permanent acquisition area and/or TCE of APN 466-083-14. The wooden power poles may have been treated with creosote as a fire retardant.
- Yellow thermoplastic and yellow painted freeway striping and pavement markings were identified within the project footprint and may contain lead chromate.
- A stockpile was observed to be located at the I-405 SB on-ramp to SR-133. This stockpile appears to be composed primarily of soil and demolition debris; it is estimated at 25 to 30 cubic yards in volume. The source of the stockpile is unknown.
- Two bridges are located within the project corridor that crosses the San Diego Creek – Bridge No. 55-0285 and Bridge No. 55-0451. The original construction date of Bridge No. 55-0285 was in 1967, and Bridge No. 55-0451 was originally constructed in 1969. Because of their age, ACM and LBP may be present in the bridge structures targeted for improvement or in underground utilities requiring work, including drainage culverts.

2.2.5.3 Environmental Consequences

Alternative 1 (No Build)

Under the No Build Alternative, no improvements would be implemented, and no temporary or permanent effects involving hazardous waste or materials would occur.

Build Alternative 2 (Preferred Alternative) and Build Alternative 3

No permanent effects involving hazardous waste or materials would occur. Additionally, neither Alternative 2 nor Alternative 3 would require full acquisition of real property.

The build alternatives would require permanent acquisition of, and utility work within, one larger parcel consisting of APNs 466-083-13 and 466-083-14, and soil disturbance along the project corridor to implement the proposed GP and auxiliary lanes. Based on the findings of the ISA, the following potential hazardous waste concerns have been identified for the build alternatives:

- Historic diesel soil contamination in the shoulder of I-405 SB at Von Karman Avenue and south of Von Karman Avenue.
- Historic gasoline soil contamination in the shoulder of I-405 NB Jamboree Road off-ramp.
- ADL in the near-surface soils in unpaved areas of I-405.
- Yellow thermoplastic and yellow painted freeway striping and pavement markings, which may contain lead chromate.

- Widening would be required of Bridge No. 55-0285 and Bridge No. 55-0451. Based on their age, there is a potential for the structures to contain ACM and LBP. Drainage culverts targeted for improvements associated with the proposed project may also contain ACM and LBP.
- Creosote-treated wood power poles located within the permanent acquisition area and/or TCE of APN 466-083-14.
- Stockpile of unknown origin consisting of soil and demolition debris at I-405 SB on-ramp to SR-133.

An ISA was conducted February 10, 2016. Based on the findings of this ISA, several potential environmental concerns (PECs) were identified at the project area. These include ADL, LBP, and ACM, which, if disturbed, would require adequate characterization, abatement, and handling.

It is anticipated that soils in the upper few feet of unpaved highway shoulder may contain ADL due to use of leaded gasoline as automotive fuel during the project site's 50-year operation as a freeway, which represents a PEC for the proposed project. These soils may be a potential hazardous waste if they are disturbed and not qualified for reuse; therefore, unpaved highway shoulder soil should be tested for ADL to address removal and disposal of ADL-impacted soils during construction. Prior reports and/or investigations conducted for ADL may exist and should be obtained and incorporated in the analysis plan of a comprehensive ADL study for the affected area.

Aerially Deposited Lead (ADL) from the historical use of leaded gasoline, exists along roadways throughout California. There is the likely presence of soils with elevated concentrations of lead as a result of ADL on the state highway system right of way within the limits of the project alternatives. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016 ADL Agreement between Caltrans and the DTSC. This ADL Agreement allows such soils to be safely reused within the project limits as long as all requirements of the ADL Agreement are met.

Yellow thermoplastic and yellow painted freeway stripe and pavement markings are suspected to be LBP containing lead chromate, which is a potential hazardous waste, and are considered PECs on the project. If removal of traffic striping is planned as part of the project improvements, the striping must be tested for LBP to address removal and disposal during construction. Prior to LBP testing, existing reports of testing for other ongoing projects should be obtained and incorporated in the analysis.

Due to the age of the ROW facility, ACM and LBP may be present in areas where demolition occurs or in underground utilities requiring work. If a facility is demolished, this would become a potential hazardous waste, and an ACM and LBP survey would be conducted for portions of the freeway to be demolished. Two structures were identified for partial demolition for the proposed project:

1. San Diego Creek Bridge (south of SR-133), Bridge No. 55-0451 – NB I-405 Widening
2. San Diego Creek Bridge (north of Harvard Avenue), Bridge No. 55-0285 – NB I-405 Widening

The project ISA identified several RECs that would require soil sampling at the project area. RECs, as well as PECs, with specific locations are summarized below:

- **SB I-405 Shoulder** – Based on two past incidents with diesel fuel spills and the lack of actual records of cleanup, it is recommended that OCTA test soil south of Von Karman Avenue and north of Jamboree Road along the SB I-405 shoulder for total petroleum hydrocarbons as diesel (TPH-d) during the ADL sampling activities if staining, strong odors, and/or elevated photoionization detector (PID) readings are encountered.
- **NB I-405 Jamboree Road Off-Ramp** – A gasoline spill occurred, and no records of the spill or cleanup were found. Accordingly, this represents an REC. It is recommended that OCTA test soil within the proposed area of the I-405 NB Jamboree Road off-ramp improvements for total petroleum hydrocarbons as gasoline (TPH-g) during the ADL sampling activities if staining, strong odors, and/or elevated PID readings are encountered.
- **SB I-405 On-Ramp to SR-133** – A stockpile of unknown origin was identified that appears to be largely composed of soil and demolition debris and is estimated to be approximately 25 to 30 cubic yards in volume. Due to the unknown source of this stockpile, it should be considered an REC. If the stockpile is still present during soil sampling, the stockpile would be sampled to characterize the waste.

The ISA also showed potential for groundwater contamination with VOCs along SB I-405, north of Jamboree Road. Although groundwater is not anticipated to be encountered during the I-405 widening, it may be encountered during installation of deep foundations. If any deep foundations are proposed along SB I-405, north of Jamboree Road, possible groundwater contamination in this area should be reconsidered and re-evaluated.

Permanent acquisition properties were evaluated, and no PECs were found due to lack of available environmental records. High-voltage overhead power lines, with no associated

transformers, were not considered an REC; however, potential removal of these electrical poles during project construction would be considered a PEC unless further tested and confirmed nonhazardous.

Construction (Short-Term) Impacts

Construction of the project could impact properties that may be temporarily used as construction staging areas. The locations of these properties are provided in the ISA. No PECs were identified for the properties required for TCEs. Based on available regulatory database records reviews, no environmental records were identified for these properties. Given that no RECs or PECs were identified for the properties required for TCEs, no hazardous waste is anticipated to be encountered.

Implementation of Measures HW-1 through HW-6 (under Avoidance, Minimization, and/or Mitigation Measures in Section 2.2.5.4) would minimize or avoid impacts related to hazardous waste/materials.

2.2.5.4 Avoidance, Minimization, and/or Mitigation Measures

The ISA prepared for the project determined that no hazardous waste Preliminary Site Investigations are required. The following avoidance, minimization, and/or mitigation measures would be implemented with the build alternatives and would minimize or avoid impacts related to hazardous waste/materials. Standardized measures which are employed on most, if not all, Caltrans projects are indicated in bold.

HW-1: During final design, OCTA will ensure ADL Site Investigations consisting of limited soil sampling will be conducted for all unpaved portions of the project site where soil will be disturbed. If the depth of excavation at the paved areas exceeds the depth of the existing subbase (coarse materials), native soil in these areas will be also tested. Results of hazardous waste sampling will indicate the level of remediation efforts required. Any special handling, treatment, or disposal provisions associated with ADL will be included in the final project construction package.

HW-2: Prior to construction, the stockpile of unknown origin consisting of soil and demolition debris at the I-405 SB on-ramp to SR-133 will be tested for waste characterization if it is still present at the time of the recommended soil sampling.

HW-3: Due to a diesel fuel spill incident that occurred along I-405 SB south of Von Karman Avenue, OCTA will ensure the soil south of Von Karman Avenue and north of Jamboree Road along the I-405 SB shoulder is tested for TPH-d during final design.

HW-4: During final design, OCTA will ensure ACM and LBP surveys are conducted where structures will be disturbed, including at San Diego Creek Channel (Reach 1) Bridge No. 55-0285 and San Diego Creek Channel (Reach 2) Bridge No. 55-0451 located at PM 6.41 and PM 1.50, respectively.

HW-5: Prior to construction, sampling and analysis of yellow striping will be performed by the Contractor in accordance with Construction Program Procedure Bulletin 99-2 (Caltrans, 2006).

HW-6: During construction, removal of any creosote-treated wood power poles will require proper disposal as a hazardous waste.