

2.12 Hazardous Waste/Materials

2.12.1 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 (CERCLA) 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
- Clean Water Act
- Clean Air Act
- 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, Executive Order (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 California 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 (Porter-Cologne 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.

2.12.2 Affected Environment

This section is based on the *Phase I Initial Site Assessment* (ISA) (October 2017).

2.12.2.1 Field Survey and Record Search Methodology

The following were conducted as part of the ISA:

- **Reconnaissance-Level Visits:** On December 29, 2016, and January 10 and 17, 2017, site reconnaissance visits consisting of the observation and documentation of existing conditions along and in the vicinity of the project area and the nature of the development within 0.25 mile (mi) of the project segment of Interstate 5 (I-5) were conducted. The visits included observations of specific properties for evidence of release(s) and assessment of the potential for on-site releases of hazardous materials and petroleum products. The reconnaissance-level visits were limited to the exterior parts of properties proposed for partial acquisition as part of the Build Alternative and Design Option 3.
- **Environmental Database Review:** A records search of federal and State environmental databases for the area within approximately 0.5 mi of the project segment of I-5 was conducted on December 19, 2016. The search of the National Priority List (NPL) covered an area within 1.0 mi of the project area.
- **Agency Records Review:** The United States Environmental Protection Agency (EPA), the California Department of Toxic Substances Control (DTSC) Hazardous Materials Division, the Santa Ana Regional Water Quality Control Board (RWQCB,) and the Orange County Health Care Agency (OCHCA) were contacted to obtain documentation for properties within and adjacent to the existing and proposed right-of-way for the Build Alternative.
- **Historical Research:** Aerial photographs, Sanborn Fire Insurance Maps, and historical topographic maps of the area along and in the vicinity of the project segment of I-5 were reviewed.

Based on the site visits and records searches, several hazardous materials were identified as potentially of concern within the existing I-5 right-of-way at properties proposed for partial acquisition under the Build Alternative, and parcels directly adjacent to those areas. Those types of hazardous materials are described below.

2.12.2.2 Results of the Initial Site Assessment

Proposed Acquisition Parcels

Based on the field survey, historical research, and database search discussed above in Section 2.12.2.1, the following properties would be partially acquired and were identified as having hazardous waste concerns. Subsequent to approval of the *Phase I Initial Site Assessment* (October 2017), 620 South B Street has been demolished and is no longer considered a Recognized Environmental Condition (REC) and is therefore not discussed further in this section. Refer to Table 2.12.1 below, for more detailed information regarding the type of hazardous concern at each parcel and Figures 2.12-1 and 2.12-2 for the location of the properties.

4162 Trabuco Road, Irvine (APN 529-241-01): The proposed grading activities would impact the on-site storage area, which has likely resulted in limited soil contamination and would possibly impact contaminated soils (that are below regulatory thresholds), which present a de minimis condition.

No Address (Assessor's Parcel Number [APN] 432-391-59): Based on the reconnaissance-level visit and available information, this facility was observed to be a landscaping area. Based on the environmental database and agency records reviews, this parcel has not reported any usage, storage, or transport of hazardous materials or waste. In addition, no indication of release has been noted in association with this parcel. However, based on review of historical maps and photographs, the parcel was historically used for agricultural production between the 1940s and 1970s and has not yet been redeveloped. The Build Alternative proposes partial acquisition of landscaped areas and proposes future roadway uses. This partial acquisition presents a de minimis condition and no REC has resulted in this regard.

Two petroleum-related pipelines are reported to be present at this parcel, one 10-inch Santa Fe Pacific Pipeline Partners (SFPP) oil pipeline and one 16-inch SFPP oil pipeline. Refer to detailed information under the Other Observations Section, below.

Table 2.12.1: Detailed Hazardous Concerns by Parcel

Address, APN, and Current Occupant/Type of Business	Type of Acquisition		Types of Concern	Proposed for Site Investigation ¹
	Alternative 2A	Alternative 2B (Preferred Alternative)		
No Address APN 432-391-59	Partial	Partial	Two petroleum-related pipelines are reported to be present at this parcel, one 10-inch SFPP oil pipeline and one 16-inch SFPP oil pipeline. There is a high likelihood that these pipelines have leaked. In addition, VOCs and petroleum hydrocarbons associated with crude oil are likely and have resulted in an REC at this parcel, especially near Tustin Ranch Road, as well as within existing and former Browning Avenue right-of-way.	Yes
4162 Trabuco Road Irvine, CA APN 529-241-01 Storage Area	Partial	Partial	The proposed grading activities would impact the on-site storage area, which has likely resulted in limited soil contamination and would possibly impact contaminated soils which would potentially affect soil management and worker safety during construction.	Yes
1142 El Camino Real Tustin, CA APN 432-064-06 Landscape Area	Partial	None	Although this parcel has not reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facilities located at 13812 Newport Avenue in Tustin and at 13771 Newport Avenue in Tustin may have resulted in releases to the groundwater, and contaminated groundwater could underlie this parcel.	Yes Alternative 2A Only
1122 El Camino Real Tustin, CA APN 432-074-04 Landscape Area	Partial	None	Although this parcel has not reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facilities at 13771 Newport Avenue in Tustin may have resulted in releases to the groundwater, and contaminated groundwater could underlie this parcel. Based on the age of the structure, the structure may contain asbestos-containing materials and lead-based paints.	Yes Alternative 2A Only
No Address APN 432-074-09 Landscape Area	Partial	None	Although this parcel has not reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facilities at 13771 Newport Avenue and 610 El Camino Real in Tustin may have resulted in releases to the groundwater, and contaminated groundwater could underlie this parcel.	Yes Alternative 2A Only

Table 2.12.1: Detailed Hazardous Concerns by Parcel

Address, APN, and Current Occupant/Type of Business	Type of Acquisition		Types of Concern	Proposed for Site Investigation ¹
	Alternative 2A	Alternative 2B (Preferred Alternative)		
14042 Newport Avenue Tustin, CA APN 432-074-07 Vacant Disturbed Land	Partial	None	Although this parcel has not been reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facilities at 610 El Camino Real in Tustin, may have resulted in releases to the groundwater, and contaminated groundwater could underlie this parcel.	Yes Alternative 2A Only
600 West 6 th Street Tustin, CA APN 401-341-01 Church Structure Surface Parking Lot Cell Tower	Partial	None	Based on the age of the structure, asbestos-containing materials, and lead-based paints may be encountered during demolition/modification of the structure.	Yes Alternative 2A Only
620 S. B Street Tustin, CA APN 401-341-04 Two Commercial Structures	Partial	None	Based on the age of the structure, asbestos-containing materials, and lead-based paints may be encountered during demolition/modification of the structure.	Yes Alternative 2A Only
580 West 6 th Street Tustin, CA APN 401-341-06 Storage Building Parking Lot	Partial	None	Based on the age of the structure, asbestos-containing materials and lead-based paints may be encountered during demolition/modification of the structure.	Yes Alternative 2A Only
Total by Alternative	9 Partial	2 Partial		

Source: Phase I ISA (October 2017)

Note: Sites of the potential hazardous waste concerns are shown on Figures 2.12-1 and 2.12-2.

¹ Site investigations will be conducted during PS&E.

APN = Assessor's Parcel Number

PS&E = Plans, Specifications, and Estimates

REC = Recognized Environmental Condition

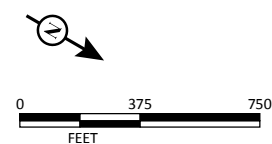
SFPP = Santa Fe Pacific Pipeline Partners

VOCs = volatile organic compounds

This page intentionally left blank



- | | |
|--|--|
| <ul style="list-style-type: none"> Project Footprint Parcel Boundary | <p>Alternative 2A Acquisitions</p> <ul style="list-style-type: none"> Full Acquisition Permanent Easement/Temporary Construction Easement/Partial Acquisition Permanent Easement/Partial Acquisition Temporary Construction Easement/Partial Acquisition Partial Acquisition Temporary Construction Easement |
|--|--|
- Alternative 2A Potential Hazardous Waste Sites
- Temporary Construction Easement/ Partial Acquisition
 - Temporary Construction Easement



SOURCE: Google Maps (2016); AECOM (2016)
 I:\URS1402\GIS\MXD\HazWaste\HazWaste_Alt2A.mxd (4/11/2018)

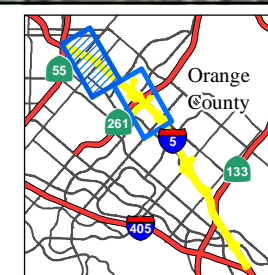


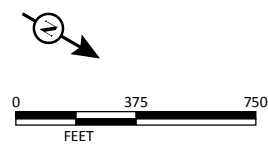
FIGURE 2.12-1
 Sheet 1 of 2

I-5 Improvement Project: I-405 to SR-55
 Sites of Potential Hazardous Waste
 Concerns for Alternative 2A
 12-ORA-5 PM 21.3/30.3
 EA No. 0K670K

This page intentionally left blank



- | | |
|---|---|
| <ul style="list-style-type: none"> Project Footprint Parcel Boundary Alternative 2A Potential Hazardous Waste Sites Temporary Construction Easement/ Partial Acquisition Temporary Construction Easement | <ul style="list-style-type: none"> Alternative 2A Acquisitions Full Acquisition Permanent Easement/Temporary Construction Easement/Partial Acquisition Permanent Easement/Partial Acquisition Temporary Construction Easement/Partial Acquisition Partial Acquisition Temporary Construction Easement |
|---|---|



SOURCE: Google Maps (2016); AECOM (2016)
I:\URS1402\GIS\MXD\HazWaste\HazWaste_Alt2A.mxd (4/11/2018)

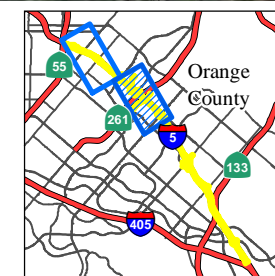


FIGURE 2.12-1
Sheet 2 of 2

I-5 Improvement Project: I-405 to SR-55
Sites of Potential Hazardous Waste
Concerns for Alternative 2A
12-ORA-5 PM 21.3/30.3
EA No. 0K670K

This page intentionally left blank



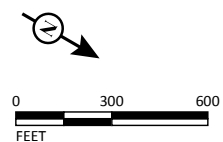
Project Footprint
 Parcel Boundary

Alternative 2B Potential Hazardous Waste Sites

- Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

Alternative 2B Acquisitions

- Full Acquisition
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Permanent Easement/Partial Acquisition
- Temporary Construction Easement/Partial Acquisition
- Permanent Easement/Temporary Construction Easement
- Temporary Construction Easement



SOURCE: Google Maps (2016); AECOM (2016)

I:\URS1402\GIS\MXD\HazWaste\HazWaste_Alt2B.mxd (3/28/2019)

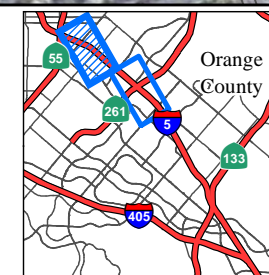


FIGURE 2.12-2

Sheet 1 of 2

I-5 Improvement Project: I-405 to SR-55
 Sites of Potential Hazardous Waste Concerns
 for Alternative 2B (Preferred Alternative)

12-ORA-5 PM 21.3/30.3

EA No. 0K670K

This page intentionally left blank



Project Footprint
Parcel Boundary

Alternative 2B Potential Hazardous Waste Sites

- Temporary Construction Easement/Partial Acquisition
- Temporary Construction Easement

Alternative 2B Acquisitions

- Full Acquisition
- Permanent Easement/Temporary Construction Easement/Partial Acquisition
- Permanent Easement/Partial Acquisition
- Temporary Construction Easement/Partial Acquisition
- Permanent Easement/Temporary Construction Easement
- Temporary Construction Easement

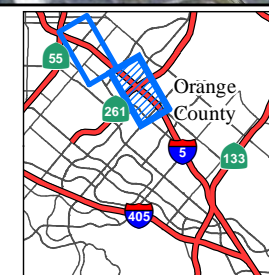


FIGURE 2.12-2
Sheet 2 of 2

I-5 Improvement Project: I-405 to SR-55
Sites of Potential Hazardous Waste Concerns
for Alternative 2B (Preferred Alternative)

12-ORA-5 PM 21.3/30.3
EA No. 0K670K

This page intentionally left blank

No Address (APN 432-391-59): Two petroleum-related pipelines are reported to be present at this parcel, one 10-inch SFPP oil pipeline and one 16-inch SFPP oil pipeline. There is a high likelihood that these pipelines have leaked. In addition, VOCs and petroleum hydrocarbons associated with crude oil are likely and have resulted in an REC at this parcel, especially near Tustin Ranch Road, as well as within existing and former Browning Avenue right-of-way.

1142 El Camino Real, Tustin (APN 432-064-06): Although this parcel has not reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facilities located at 13812 Newport Avenue in Tustin and 13771 Newport Avenue in Tustin may have resulted in releases to the groundwater, and contaminated groundwater could underlie this parcel.

1122 El Camino Real, Tustin (APN 432-074-04): Although this parcel has not reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facility at 13771 Newport Avenue in Tustin may have resulted in releases to the groundwater, and contaminated groundwater could underlie this parcel. Refer to Table 2.12.1 and the Lead-Based Paint and Asbestos-Containing Materials sections below for more detailed information.

No Address (APN 432-074-09): Although this parcel has not reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facilities at 13771 Newport Avenue and 610 El Camino Real in Tustin, may have resulted in releases to the groundwater and contaminated groundwater could underlie this parcel.

14042 Newport Avenue, Tustin (APN 432-074-07): Although this parcel has not reported the presence of hazardous materials, it is acknowledged that the off-site dry cleaner facility at 610 El Camino Real in Tustin may have resulted in releases to the groundwater, and contaminated groundwater could underlie this parcel.

600 West 6th Street in Tustin (APN 401-341-01): Based on the age of the structure, the structure may contain asbestos-containing materials and lead-based paints. Refer to the Lead-Based Paint and Asbestos-Containing Materials sections below for more detailed information.

580 West 6th Street in Tustin (APN 401-341-06): Based on the age of the structure, the structure may contain asbestos-containing materials and lead-based paints. Refer to the Lead-Based Paint and Asbestos-Containing Materials sections below for more detailed information.

Non-Acquisition Parcels

Based on the field survey and database search discussed above in Section 2.12.2.1, the following properties are located in the vicinity of the maximum disturbance limits of the Build Alternative and were identified as having hazardous waste concerns. Refer to Table 2.12.1 below, for more detailed information regarding the type of hazardous concern at each parcel.

The following off-site dry cleaners are located in proximity to the Build Alternative and based on the nature of dry cleaners and the proximity of these dry cleaners to the project, these dry cleaners were identified as having soil gas and groundwater contamination concerns:

- 16 Technology Drive, Irvine
- 15370 Alton Parkway, Irvine
- 14120 Culver Drive, Irvine
- 4200 Trabuco Road, Irvine
- 13844 Red Hill Avenue, Tustin (Paradise Cleaners)
- 13812 Newport Avenue #105, Tustin (Dry Clean Express)
- 13771 Newport Avenue, Tustin (Sunny Cleaners, Elegant Cleaner, A&A Cleaner, All Star Cleaners)
- 706 El Camino Real, Tustin (Bronco Cleaners and Laundry)
- 610 El Camino Real, Tustin

Marine Corps Air Station (MCAS)-El Toro, No Address: This parcel is located east of the maximum disturbance limits of the project, and it covers approximately 4,700 acres (ac). Commissioned in 1943, it supported the Fleet Marine Forces in the Pacific Ocean, serving as the major west coast jet fighter facility. In total, 25 potentially contaminated areas were identified on the Air Station, including four landfills suspected of containing both hazardous and solid waste, and other areas where polychlorinated biphenyls (PCBs), battery acids, leaded fuels, and other hazardous substances were suspected of being dumped or spilled. A Remedial Investigation identified volatile organic compounds (VOCs), primarily trichloroethylene, in groundwater that migrated more than three mi off the property. The primary source of the groundwater contamination was caused by two large aircraft hangers at the facility.

14886 Sand Canyon Avenue, Irvine: This parcel is south of the maximum disturbance limits of the project. According to the environmental database review,

this facility was listed as a Leaking Underground Storage Tank (LUST) cleanup site in 2000. A spill of unleaded gasoline was reported to affect the groundwater beneath the facility. In addition, in 1996, a release of gasoline from corroded piping materials was reported; other groundwater was affected by the release. Remedial activities, soil vapor extraction (SVE), are being conducted and groundwater is being monitored due to the reported spills and releases of hazardous materials. No closure letter was issued and the case remains open.

Polychlorinated Biphenyls

Multiple pad- and pole mounted electrical transformers were observed at number of locations in the construction area within the I-5 right-of-way. Those transformers are owned and operated by Southern California Edison (SCE). No staining or leaks were observed beneath the transformers, and all the transformers appear to be in good condition.

Staining, Discolored Soils, and/or Corrosion

No staining, discolored soils, or corrosion were observed within the I-5 right-of-way or the parcels proposed for partial acquisition.

Aerially Deposited Lead

I-5 was constructed prior to 1963 and has been heavily traveled. However, I-5 through its entirety within the maximum disturbance limits of the Build Alternative was reconstructed in the interim. Therefore, the potential for lead contamination to exist within exposed soils along I-5 due to aerially deposited lead (ADL) is unlikely to remain.

Lead Chromate

Yellow pavement traffic markings (thermoplastic and paint) on I-5 and the arterials crossing I-5 potentially contain hazardous levels of lead chromate.

Lead-Based Paint

There may be lead-based paint (LBP) in buildings, structures and bridge structures constructed before 1979 located within the I-5 right-of-way and on parcels proposed for partial acquisitions under the Build Alternative, such as 580 West 6th Street in Tustin (APN 401-341-06) and 600 West 6th Street in Tustin (APN 401-341-01). Although 620 South B Street (APN 401-341-04) was included in the *Phase I Initial Site Assessment* (October 2017), the structure at this address has since been demolished and is no longer considered a concern regarding LBP. Refer to Table

2.12.1 for more detailed information regarding the potential properties contaminated with LBP.

Asbestos-Containing Materials

The use of asbestos in many building products was banned by the EPA by the late 1970s. Asbestos-containing materials (ACMs) represent a concern when they are subject to damage that results in the release of fibers. ACMs may be found in building materials such as rails, bearing pads, support piers, and expansion joint material in bridges, asphalt, and concrete. There may be ACMs in structures and bridge structures along the project segment of I-5 based on the construction dates of the bridges and in buildings located on parcels proposed for partial acquisition under the Build Alternative, such as 580 West 6th Street in Tustin (APN 401-341-06) and 600 West 6th Street in Tustin (APN 401-341-01). Although 620 South B Street in Tustin (APN 401-341-04) was included in the *Phase I Initial Site Assessment* (October 2017), the structure at this address has since been demolished and is no longer considered a concern regarding ACM. Refer to Table 2.12.1 for more detailed information regarding the potential properties contaminated with ACMs.

Soil and/or Groundwater Contamination

As discussed earlier, soil and/or groundwater contamination has been identified at properties proposed for partial acquisition under the Build Alternative, or properties located in the vicinity of the maximum disturbance limits of the Build Alternative. Refer to Table 2.12.1 for more detailed information regarding the potential properties with groundwater and/or soil contamination.

Gas and Oil, and Groundwater Monitoring Wells

No evidence of oil or gas production wells was observed within the I-5 right-of-way. Several groundwater monitoring wells were observed within the existing I-5 right-of-way. No wells were observed within parcels proposed for partial acquisition under the Build Alternative.

Other Observations

As discussed briefly earlier, petroleum pipelines were identified within the boundaries of the I-5 and the existing railroad right-of-way, particularly at the property at APN 432-391-59, which will be partially acquired. Based on the observed conditions, there is a high likelihood that these pipelines have leaked. As a result, VOCs and petroleum hydrocarbons associated with crude oil are likely present, resulting in an REC.

Existing railroad has been present within the I-5 right-of-way since prior to 1896. Elevated levels of petroleum hydrocarbons, lead concentrations, and hazardous materials associated with treated wood, as well as herbicide/pesticide residues are likely to be present within the I-5 right-of-way soils associated with railroad. As a result, active and inactive railroad beds likely have concentrations of petroleum products and lead elevated above natural background conditions. The Build Alternative would not involve acquisition of the railroad.

2.12.3 Environmental Consequences

2.12.3.1 Temporary Impacts

Build Alternative (Alternative 2A and Alternative 2B [Preferred Alternative])¹

Temporary impacts related to hazardous materials/wastes during project construction could occur within the maximum disturbance limits for the Build Alternative and on individual properties identified for partial acquisition, as described in the following sections. No hazardous waste concerns were observed or reported within parcels proposed for partial acquisition under the Build Alternative. The temporary impacts discussed below apply to the Build Alternative and Design Option 3.

Impacts within the Maximum Disturbance Limits

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 Build Alternative. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under the July 1, 2016 ADL Agreement between the California Department of Transportation (Caltrans) and the California 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.

As discussed in Section 2.12.2.2, although the potential for lead contamination to exist within exposed soils along I-5 due to ADL is unlikely to remain, verification sampling should occur in order to confirm no ADL is present. Project Feature

¹ Alternative 2B without Design Option 3 has been selected as the Preferred Alternative

PF-HAZ-1 specifically requires the ADL studies to be conducted along the I-5 right-of-way to determine whether contamination exists in association with ADL.

PF-HAZ-1 A Caltrans special provision will be included as part of the Project Specifications and Estimates (PS&E) package to ensure proper removal, handling, and disposal of aerially deposited lead (ADL) containing material at a permitted disposal facility.

Hazardous Materials/Wastes During Construction

Typical hazardous materials anticipated to be used during construction of the Build Alternative (e.g., solvents, paints, fuels) and hazardous wastes generated during construction would be handled in accordance with applicable federal and State regulations and Caltrans policies regarding the use, storage, handling, disposal, and transport of those materials. As a result, the Build Alternative would not result in adverse impacts related to the use of hazardous materials or the generation of hazardous wastes during construction.

Polychlorinated Biphenyls

There may be PCBs in pad- and pole-mounted transformers within the maximum disturbance limits for the Build Alternative. None of those transformers appeared to be leaking during the site reconnaissance visits. If any leaking transformers are noted during the property acquisition for and construction of the Build Alternative, those leaks will be considered a PCB hazard unless tested and confirmed otherwise, and must be handled accordingly. As a result, the Build Alternative would not result in adverse impacts related to PCBs.

Pavement Marking Materials

Yellow traffic striping and pavement-marking materials (paint, thermoplastic, permanent tape, and temporary tape) that would be removed from the I-5 mainline and ramps, and arterials at their crossings of I-5 during construction of the Build Alternative may contain elevated concentrations of metals such as lead. Removal of these materials during construction could affect construction workers and the surrounding environment. However, Project Feature PF-HAZ-2 will address this effect.

PF-HAZ-2 A Caltrans special provision will be included as part of the Project Specifications and Estimates (PS&E) package to ensure proper removal, handling, and disposal of the generated traffic striping waste at a permitted disposal facility.

As a result, the Build Alternative would not result in adverse impacts related to yellow traffic striping and pavement marking materials.

Asbestos-Containing Materials and Lead-Based Paint Related to Structures

Based on the construction dates of the structures within the disturbance limits, ACMs LBPs may be present in bridges proposed to be widened or replaced as part of the Build Alternative. ACMs and LBPs represent a concern when they are subject to damage. Project Features PF-HAZ-3 and PF-HAZ-4 specifically require proper testing, monitoring, removal, and disposal of ACMs and LBPs.

PF-HAZ-3 A Caltrans special provision will be included as part of the Project Specifications and Estimates (PS&E) package to ensure proper removal, handling, and disposal of asbestos-containing materials (ACMs) and lead-based paints (LBPs) at a permitted disposal facility.

As a result, the Build Alternative would not result in adverse impacts related to ACMs and LBPs.

Discovery of Unknown Hazardous Material Sources

During construction, there is the potential for discovery of unknown hazards. Project Feature PF-HAZ-4 will address unknown hazards.

PF-HAZ-4 During excavation, the Construction Contractor will monitor soil excavation for visible soil staining, odor, and the possible presence of unknown hazardous material sources. If hazardous material contamination or sources are suspected or identified during project construction activities, the Construction Contractor will be required to cease work in the area and to have an environmental professional evaluate the soils and materials to determine the appropriate course of action required, consistent with the Unknown Hazards Procedures in Chapter 7 of the Caltrans *Construction Manual* (July 2017). Adequate protection to construction workers will be provided with the implementation of a Health and Safety Plan and Soil management Plan.

As a result, the Build Alternative would not result in adverse impacts related to unknown hazards.

Potentially Contaminated Soil and/or Groundwater

The Build Alternative could disturb potentially contaminated soil and/or groundwater originating at properties outside the maximum disturbance limits and the boundaries of property. Eleven parcels are located in the vicinity of the maximum disturbance limits of the Build Alternative, but the land uses on those parcels have contributed to known groundwater impacts. These 11 parcels are located at MCAS-El Toro, 16 Technology Drive, 15370 Alton Parkway, 14886 Sand Canyon Avenue, 14120 Culver Drive, and 4200 Trabuco Road in Irvine, 13844 Red Hill Avenue, 13812 Newport Avenue No. 105, 13771 Newport Avenue, 706 El Camino Real, and 610 El Camino Real in Tustin. These parcels are outside the maximum disturbance limits for the Build Alternative, but the land uses on those parcels have contributed to known groundwater impacts. Due to the nature of the businesses and the proximity of these facilities to the maximum disturbance limits for the Build Alternative, there is potential that contaminated groundwater originating at those parcels would likely be encountered during the widening or replacement of the bridge structures under the Build Alternative. Project Feature PF-HAZ-5 will address those hazards.

PF-HAZ-5 Site investigations will be performed at the properties that may be either partially acquired for the project and will be completed during the PS&E phase. The site investigations will determine whether more extensive subsurface investigation will be needed. If deemed necessary, subsurface investigations will be performed according to the recommendations of the assessment.

As discussed in Section 2.9, Water Quality and Storm Water Runoff, groundwater dewatering during construction may be required. As specified in Project Feature PF-WQ-5 in that section, if dewatering is required, construction site dewatering will comply with one of two orders or any subsequent orders that apply to groundwater discharges to surface waters within the Santa Ana Region depending on the depth and quality of the groundwater.

As a result, the Build Alternative would not result in adverse impacts related to contaminated soil and/or groundwater at these parcels.

Impacts Associated with Partial Acquisitions

Alternative 2A would result in the partial acquisition of nine parcels, and Alternative 2B (Preferred Alternative) would result in partial acquisition of two parcels with potential hazardous waste concerns. Those parcels and the potential risks associated

with the use of land from those parcels for partial acquisition under the Build Alternative are as follows.

Potentially Hazardous Waste Storage Area

APN 529-241-01: There is the potential for the Build Alternative to disturb a potentially hazardous waste storage area located at the boundaries of a parcel proposed for partial acquisition as described in Table 2.12.2 and shown on Figures 2.12-1 through 2.12-4. The parcel is located at 4162 Trabuco Road in Irvine. Due to the nature of the business located on the parcel and the proximity of the hazardous waste storage area to the maximum disturbance limits for the Build Alternative, there is a moderate potential for this parcel to result in an environmental concern during construction of the Build Alternative. These risks will be addressed by Project Feature PF-HAZ-6.

PF-HAZ-6 A preliminary site investigation will be completed during PS&E on several properties which are identified as partial acquisitions for the Build Alternative, and several properties which are not proposed for acquisition or use as partial but are adjacent to the project limits. The preliminary site investigation will assess the presence or absence of impacts associated with the hazardous waste storage area observed at these parcels.

As a result, the Build Alternative would not result in adverse impacts related to the hazardous waste storage area. Refer to Table 2.12.1 for detailed information by Alternative.

Asbestos-Containing Materials and Lead-Based Paint Related to Structures

APNs 432-074-04, 401-341-01, 401-341-04, and 401-341-06: Based on the construction date of the structures that are proposed to be partially acquired under Alternative 2A, ACMs and LBPs may be present in these structures. As discussed earlier, ACMs and LBPs represent a concern when they are subject to damage. Project Features PF-HAZ-3 and PF-HAZ-4 specifically require proper testing, monitoring, removal, and disposal of ACMs and LBPs. As a result, neither Alternative 2A nor Alternative 2B (Preferred Alternative) would result in adverse impacts related to ACMs and LBPs.

Petroleum Pipelines

No Address (APN 432-391-59; boundaries of the I-5 right-of-way and within the existing railroad right-of-way): Due to the close proximity of the observed

petroleum pipelines and high likelihood that these pipelines have leaked. As discussed earlier, VOCs and petroleum hydrocarbons associated with crude oil are likely to be present. Project Feature PF-HAZ-6 requires that a Site Investigation be performed for this parcel to identify potential hazards that may occur during project construction associated with contaminated soil and groundwater. The Site Investigation will provide the appropriate avoidance, minimization, or mitigation for those hazards. As a result, the Build Alternative would not result in adverse impacts related to contaminated soil and/or groundwater at this parcel.

Potentially Contaminated Soil and/or Groundwater

APNs 432-064-06, 432-074-09, and 432-074-07: Off-site dry cleaner facilities in the vicinity of these APNs may have resulted in releases to the groundwater, and contaminated groundwater could underlie these parcels. Project Feature PF-HAZ-6 requires that a Site Investigation be performed for this parcel to identify potential hazards that may occur during project construction associated with contaminated soil and groundwater. The Site Investigation will provide the appropriate avoidance, minimization, or mitigation for those hazards. As a result, the Build Alternative would not result in adverse impacts related to contaminated soil and/or groundwater at this parcel.

No Build Alternative (Alternative 1)

The No Build Alternative would not result in the disturbance or removal of any soils, groundwater, or structures and, therefore, would not result in temporary impacts related to hazardous waste and materials.

2.12.3.2 Permanent Impacts

Build Alternative (Alternative 2A and Alternative 2B [Preferred Alternative])

Routine maintenance activities during operation of the Build Alternative would be required to follow applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, the operation of the Build Alternative would not result in adverse impacts related to hazardous waste or materials.

No Build Alternative (Alternative 1)

The No Build Alternative would not change the existing physical environment, and therefore, there would be no permanent impacts related to hazardous waste under this alternative. Similar to the Build Alternative, routine maintenance activities would

continue under the No Build Alternative, including compliance with applicable regulations regarding the handling and disposal of potentially hazardous materials.

2.12.4 Avoidance, Minimization, and/or Mitigation Measures

The Preferred Alternative will incorporate the project features outlined above in Sections 2.12.3.1 and 2.12.3.2 to help address potential impacts. No avoidance, minimization, and/or mitigation measures are required.

This page intentionally left blank