

3.12 Hazardous Waste and Materials

The description of hazardous waste and materials is summarized from the two Initial Site Assessments (ISA) prepared for the project. The first ISA was completed in 2005, and an updated ISA was completed in 2008. Both ISAs are incorporated by reference and are available for review at the Solano Transportation Authority's (STA's) and Caltrans' offices.

3.12.1 Regulatory Setting

Hazardous materials and hazardous wastes are regulated by many State and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health, and land use.

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

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety & 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 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

3.12.2 Affected Environment

Phase I Environmental Site Assessments (ESAs) are used to assess whether potentially hazardous materials are located on a property. Standards for Phase I ESAs have been developed by the American Society for Testing and Materials (ASTM) and are used routinely to determine the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that

indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products, onto the surface or into the ground, groundwater, or surface water of the property. If a Phase I ESA finds that hazardous materials found on the property may have been released, then a Phase II ESA is usually recommended. A Phase II investigation, known as a Preliminary Site Assessment (PSA), typically includes collection and analysis of soil and water samples. Based on the results, the Phase II ESA may recommend additional testing, remediation, or other controls to address contamination. The Phase I ESA for the corridor is the ISA.

The ISA characterized the corridor as a mix of rural areas, residential properties, and commercial businesses. For a complete description of existing land uses in the corridor, please refer to Section 3.1, Land Use, on page 3.1-1.

Aerial photograph review, combined with site reconnaissance, indicated that portions of the corridor have undergone substantial changes (residential and commercial development), while others have undergone few changes between 1962 and the present. Potential environmental concerns identified in the ISA include: aerially applied chemicals in agricultural production, PCBs associated with electrical transformers, petroleum hydrocarbons associated with current and former railroad alignments, petroleum hydrocarbons from leaking underground storage tank (LUST) sites, underground utilities carrying petroleum hydrocarbons and sewage, and aerially deposited lead in exposed soils from historic vehicle emissions.

The ISA grouped adjacent features according to their potential impact to the environmental integrity of the site. The four groups include the following:

- Areas of Moderate Potential Environmental Concern
- Areas of Low Potential Environmental Concern
- Areas of Unknown Potential Environmental Concern
- Areas of Exposed Soil

Sites of moderate potential environmental concern include currently active or historic underground storage tanks (USTs); currently active or historic gasoline service stations; currently active or historic automobile service/repair facilities; and documented locations of a release/spill of hazardous materials. Each site of potential concern is identified in Table 3.12-1 and shown graphically on Figure 3.12-1. The database search completed for the corridor identified sites not listed in Table 3.12-1 or depicted on Figure 3.12-1; however, these sites would not affect the project due to their locations or other factors, such as the nature of the site.

The ISA also identified the following hazardous materials/waste conditions in the corridor:

- **Pesticides, Herbicides, and Fungicides.** Pesticides, herbicides, and fungicides are used on the properties where crops are grown. Agricultural lands are adjacent to portions of Leisure Town Road from south of I-80 to Vanden Road (Alternatives B, C, and D) and a portion of Peabody Road between the Fairfield and the Vacaville city limits (Alternative E). Furthermore, a landscape supply facility is located adjacent to Peabody Road (Alternatives B, C, and D). Although

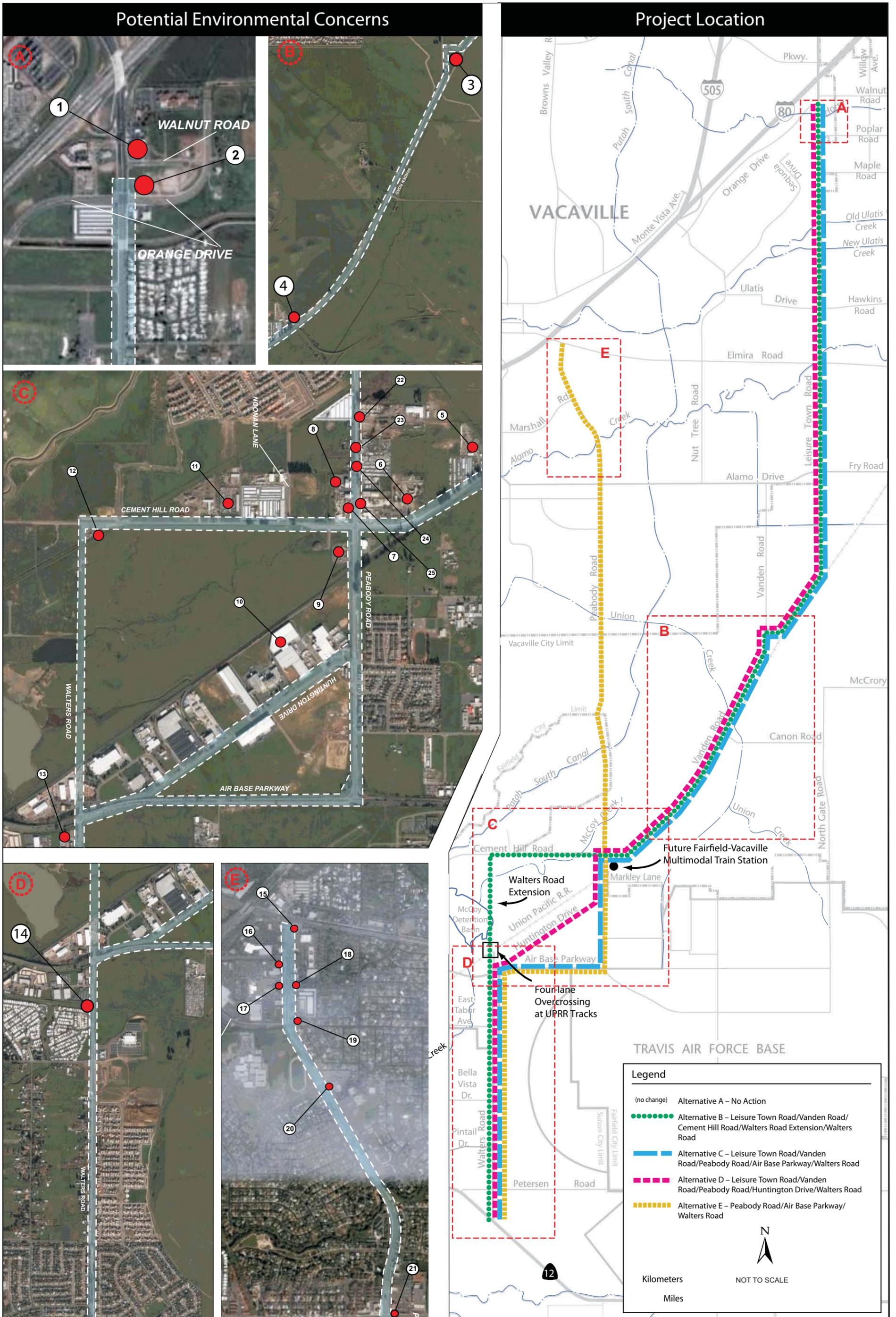


Figure 3.12-1

Potential Environmental Concerns by Location

applications, handling, and storage of restricted materials are regulated to minimize potential hazards, pesticides and pesticide residuals can be present in the soil, air, and water near areas where they were applied. Pesticide toxicity and longevity in the environment varies with the type, amount, and form of pesticide used.

**Table 3.12-1
Summary of Potential Environmental Concerns by Location**

Location	Level of Concern	Alternatives Affected	Notes
1. Union 76 Gasoline Service Station (817 Leisure Town Road, Vacaville)	Moderate	B, C, D	The gas station is listed as an open LUST and several vapor extraction and groundwater monitoring wells were observed on the property. This is a location of hazardous material release.
2. Quick Stop Car Wash and Service Station (1091 Leisure Town Road, Vacaville)	Moderate	B, C, D	This facility was not listed on any database.
3. Southern Pacific Railroad	Low	B, C, D	The railroad was not listed on any database.
4. Railway Line Connecting Union Pacific and Sacramento Northern Railroads	Low	B, C, D	This railroad was not listed on any database, and is no longer in use.
5. Paul's Engine and Machine Shop (5001 Vanden Road, Vacaville)	Unknown	B, C, D	This towing facility/car maintenance shop was listed on the RCRA-GN database.
6. Syar Readymix Plant (4969 Vanden Road, Fairfield)	Moderate	B, C, D	This concrete manufacturing facility is listed on the LUST database as a closed case.
7. Cement Hill Ready Mix (4961 Peabody Road, Fairfield)	Moderate	B, C, D, E	This commercial/industrial facility was listed as a closed LUST case.
8. Northwest Pipe (4989 Peabody Road, Fairfield)	Moderate	E	This commercial/industrial facility was listed as a closed LUST case.
9. PG&E Electrical Substation (Peabody Road and Cement Hill Road, Fairfield)	Unknown	B, C, D, E	This electrical substation was not listed on any database.
10. Owens-Illinois Plastics Product Plant (2500 Huntington Drive)	Moderate	D	This manufacturing facility was listed as an open LUST case. This is a location of hazardous material release/spill.
11. S & W Paving, AAA Sales, and Adco Auto Wrecking (2400 Cement Hill Road, Fairfield)	Moderate	B	Hazardous materials handled in auto wrecking yards are generally related to vehicular fluids, including petroleum hydrocarbons, antifreeze and coolants. Parts cleaning solvents may also have been used. This facility is listed on the UST database. This is a potential location of hazardous material release or spill.
12. Sacramento Northern Railroad	Low	B	This railroad was not listed on any database, and is no longer in use.
13. Bonfare Market (2301 Walters Road, Fairfield)	Moderate	B, C, D, E	This gas station and food market is listed as an open LUST case. This is a location of hazardous material release.

**Table 3.12-1
Summary of Potential Environmental Concerns by Location**

Location	Level of Concern	Alternatives Affected	Notes
14. Railway Line Connecting Travis AFB to the Union Pacific Railroad	Low	B, C, D, E	The railroad was not listed on any database.
15. Former Shell Service Station (101 Peabody Road, Vacaville)	Moderate	E	This facility was listed as an open LUST case in the State Regional Water Quality Control Board (RWQCB) Geotracker Database report. This is a location of hazardous material release.
16. Dick Lewis Ford (148 Peabody Road, Vacaville)	Moderate	E	This facility was listed as a closed LUST case in the State Regional Water Quality Control Board (RWQCB) Geotracker Database report. The case was closed in November 1997.
17. PG&E Vacaville Service Center (158 Peabody Road, Vacaville)	Moderate	E	This facility was listed as a closed LUST case in the State Regional Water Quality Control Board (RWQCB) Geotracker Database report. The case was closed in May 1996.
18. Flying J (177 Peabody Road, Vacaville)	Moderate	E	This facility was listed as an open LUST case in the RWQCB Geotracker Database report. This is a location of hazardous material release.
19. Spee Dee Oil Change (221 Peabody Road, Vacaville)	Moderate	E	This facility was not listed in the RWQCB Geotracker Database report.
20. Chevron #9-1668 (501 Peabody Road, Vacaville)	Moderate	E	This site is now occupied by a Valero Service Station. This facility was listed as a closed LUST case in the RWQCB Geotracker Database report. The case was closed in August 2007.
21. Chevron (1991 Peabody Road, Vacaville)	Moderate	E	This facility was not listed RWQCB Geotracker Database report.
22. Cassil Truck and Trailer Storage (Peabody Road, Fairfield)	Low	E	This facility was not listed RWQCB Geotracker Database report.
23. Fairvac Auto and Truck Wrecking/North Bay Trucking/City Towing and Transport (5016 Peabody Road, Fairfield)	Unknown	E	Hazardous materials handled in auto wrecking yards are generally related to vehicular fluids, including petroleum hydrocarbons, antifreeze, and coolants. Parts cleaning solvents may also have been used. This facility was not listed in the RWQCB Geotracker or EFS Database report. This is a potential location of hazardous material release or spill.
24. American Auto Body Specialists (1950 Walters Court, Fairfield)	Unknown	E	Hazardous materials stored and handled in auto body repair include paints, lacquers, and solvents. This facility was not listed in the RWQCB Geotracker or EFS Database report.
25. Cemex (4064 Peabody Road, Fairfield)	Low	B, C, D, E	It is unknown if hazardous materials are stored on this property.
26. Green Tree Golf Club (999 Leisure Town Road, Vacaville)	Moderate	B, C, D	This operating golf course was listed on the UST database.

**Table 3.12-1
Summary of Potential Environmental Concerns by Location**

Location	Level of Concern	Alternatives Affected	Notes
27. Papin Farms Inc. (6388 Leisure Town Road, Vacaville)	Moderate	B, C, D	This agricultural area was listed on the UST database.
28. Hilden Farm (6275 Leisure Town Road, Vacaville)	Moderate	B, C, D	This agricultural area was listed on the UST database.
29. RMC Lonestar (4964 Peabody Road, Fairfield)	Moderate	B, C, D, E	This commercial/industrial building was listed on the UST database.
30. Frontier Tours (4958 Peabody Road, Fairfield)	Moderate	B, C, D, E	This commercial/industrial building was listed on the UST database.
31. Frito-Lay (2500 Crocker Circle, Fairfield)	Moderate	B, D	This commercial/industrial building was listed on the UST database.
32. Ashland Chemical (2461 Crocker Circle, Fairfield)	Moderate	B, D	This commercial/industrial building was listed on the UST and RCRAGN databases.
33. Robbins and Myers Inc. (2100 Huntington Drive, Fairfield)	Moderate	B, C, D, E	This commercial/industrial facility was listed on the UST, CERCLIS NFRAP, RCRACOR, RCAGN, RCRA TSD Site, and State Spills Site.
34. The Hofmann Company (1980 Huntington Court, Fairfield)	Moderate	B	This facility, which was observed to be a fire station during site reconnaissance, was listed on the UST database.
35. Fire Station #11 (1975 Huntington Court, Fairfield)	Moderate	B	This fire station was listed on the UST database.
36. Farallon Plastics Limited (1941 Walters Court, Fairfield)	Moderate	B, C, D, E	This facility was listed on the RCAGN and UST databases.
37. Cheaper #31 (1500 Walters Road, Fairfield)	Moderate	B, C, D, E	This facility was listed on the UST database.
90 percent of corridor shoulders	Exposed Soil	B, C, D, E	Areas of exposed soil include the east and west shoulders of Leisure Town Road, Vanden Road, Peabody Road, Huntington Drive, and Walters Road, and the north and south shoulders of Cement Hill Road and Air Base Parkway.

Note: The database search identified additional sites in the corridor; the results of the database search are provided as an appendix to the ISA. Only those sites that present a potential concern to the project are listed in this table.

- **Aerially Deposited Lead (ADL).** The U.S. Environmental Protection Agency (EPA) recognizes that ADL may be present in soils within 50 feet of heavily traveled highways built before about 1987 because of the former use of lead additives in commercially available gasoline. Lead's relative immobility means that it generally remains where it was deposited in the soil. Thus, concentrations of lead on a site tend to be highest at the surface where it was deposited. Concentrations generally decrease with depth, with exceptions where cleaner fill was placed on top of contaminated soils, or where contaminated material was buried. Lead concentrations at four feet below grade are generally less than half of the levels at one foot below grade. Lead is not mobile in soils under most conditions because it exists in or forms insoluble compounds.

Portions of the corridor that were constructed after 1987 and are not likely to be impacted by ADL include:

- The east-west segment of the Cement Hill Road alignment (Alternative B);
- Walters Road from Bella Vista Drive to Tabor Avenue (Alternatives B, C, D and E);
- The Huntington Drive segment (Alternative D);
- The portion of Walters Road located south of the intersection with Petersen Road (Alternatives B, C, D, and E);
- The segment of Leisure Town Road from Vanden Road to Alamo Drive (Alternatives B, C, and D); and
- The west side of Leisure Town Road from Alamo Drive to Orange Drive (Alternatives B, C, and D).

All other paved segments of the corridor are likely to have ADL contamination in adjacent soils.

- **Petroleum/Sanitary Sewer Pipelines.** Underground utility pipelines are known to exist within, adjacent to, or cross under segments of all the build alternatives. These pipelines may be potential sources of petroleum hydrocarbons or biological contamination (fecal coliforms). Other unknown pipelines may also exist within or adjacent to the corridor.
- **Indications of Polychlorinated Biphenyls (PCBs).** Electrical transformers (pad- or pole-mounted), which may contain PCB's, were observed along segments of all the build alternatives, adjacent to the existing roadways.

3.12.3 Impacts (including Permanent, Temporary, Direct, Indirect, and Cumulative)

3.12.3.1 Methodology

This analysis of potential impacts below is a summary of information in the ISA. The ISA was based on information derived from the following sources:

1. Environmental records review, conducted using a commercial database search, of current and past areas (0.25-mile to 1-mile corridor) with records of hazardous material storage, use, generation, spills, disposal, investigations, and remediation as readily available in selected agency records;

2. Personnel interviews with pertinent agency and site personnel regarding site use and history of potential hazardous materials use, spills, investigations, and remediation;
3. Aerial photograph review of historical aerial photographs over several different time periods for evidence of past land uses involving disposal and other practices;
4. Windshield survey of the alternative alignments for obvious signs of hazardous material use, storage, and spills; and
5. Previously conducted hazardous materials studies.

3.12.3.2 Summary of Hazardous Materials Impacts

This section compares the potential impact of hazardous waste and materials for each alternative. As described in detail below, all four build alternatives could result in construction hazardous waste and materials impacts within the corridor. Construction-related impacts would be temporary and intermittent; therefore, there would be short-term hazardous materials impacts associated with each of the alternatives. However, none of the alternatives would have hazardous waste and materials impacts when the listed mitigations measures are implemented. Table 3.12-2 shows the potential impacts for each alternative.

Impact HAZ-1: Would the Alternatives Expose Construction Workers or Nearby Land Uses to Previously Unknown Hazardous Materials?

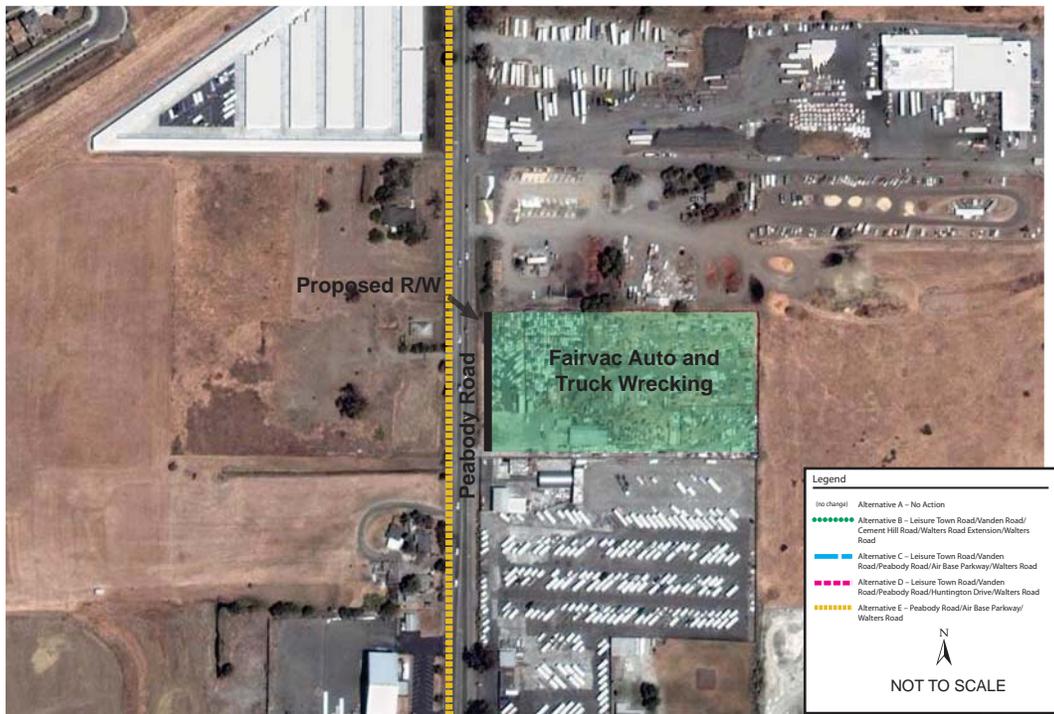
Alternative A. This alternative would not involve the use of or the potential unearthing of any hazardous materials because no construction or excavation would occur. There would be no potential for exposure of humans or the environment to hazardous materials in excess of whatever potential already exists.

Alternative B. The S&W Paving, AAA Sales, and ADCO Auto Wrecking site is located at 2400 Cement Hill Road in the City of Fairfield. The site is shown in Figure 3.12-2. Portions of this site are used as an auto wrecking yard, which potentially stores and/or uses several types of hazardous materials, including gasoline, diesel fuel, solvents for parts cleaning, batteries, antifreeze, coolants, and lubricants. The facility was listed as an UST on the EFS database report. No right-of-way is required from this site and the auto wrecking yard is several hundred feet from the proposed project construction limits. However, unknown hazardous materials associated with soil and groundwater contamination may be encountered during construction. Mitigation has been identified for this effect (Mitigation Measure HAZ-1, HAZ-2, HAZ-3, and HAZ-8).

In addition, construction activities could disturb previously unidentified hazardous materials. Mitigation has been identified for this effect (Mitigation Measure HAZ-1).

**Table 3.12-2
Summary of Potential Hazardous Waste and Materials Impacts by Location and Alternative Without Implementation of Mitigation**

Impact	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Expose Construction Workers or Nearby Land Uses to Previously Unknown Hazardous Materials.	No Impact.	Potential to encounter previously unreported hazardous materials during project construction.	Low risk to encounter previously unreported hazardous materials during project construction.	Low risk to encounter previously unreported hazardous materials during project construction.	Potential to encounter previously unreported hazardous materials during project construction.
Expose Known Hazardous Materials to Humans or the Environment.	No Impact.	Potential for exposure to ADL, polychlorinated biphenyls (PCBs) in transformers, heavy metals such as chromium and lead in yellow street striping, and petroleum hydrocarbons from leaking storage tanks, petroleum pipelines, and railroad use.	Potential for exposure to ADL, polychlorinated biphenyls (PCBs) in transformers, heavy metals such as chromium and lead in yellow street striping, and petroleum hydrocarbons from leaking storage tanks, petroleum pipelines, and railroad use.	Potential for exposure to ADL, polychlorinated biphenyls (PCBs) in transformers, heavy metals such as chromium and lead in yellow street striping, and petroleum hydrocarbons from leaking storage tanks, petroleum pipelines, and railroad use.	Potential for exposure to ADL, polychlorinated biphenyls (PCBs) in transformers, heavy metals such as chromium and lead in yellow street striping, and petroleum hydrocarbons from leaking storage tanks, petroleum pipelines, and railroad use.
Expose Humans and the Environment to Hazardous Conditions from the Accidental Release of Hazardous Materials.	No Impact.	Potential exposure through the use of heavy equipment materials and potentially hazardous road construction materials. Sanitary sewer and petroleum pipelines, as well as unknown abandoned pipelines may cross or exist within the planned roadway alignment.	Potential exposure through the use of heavy equipment materials and potentially hazardous road construction materials. Sanitary sewer and petroleum pipelines, as well as unknown abandoned pipelines may cross or exist within the planned roadway alignment.	Potential exposure through the use of heavy equipment materials and potentially hazardous road construction materials. Sanitary sewer and petroleum pipelines, as well as unknown abandoned pipelines may cross or exist within the planned roadway alignment.	Potential exposure through the use of heavy equipment materials and potentially hazardous road construction materials. Sanitary sewer and petroleum pipelines, as well as unknown abandoned pipelines may cross or exist within the planned roadway alignment.



**Figure 3.12-2
Sites with Previously Unknown Hazardous Materials**

Alternatives C and D. The ISA indicates that these build alternatives generally have a low risk to encounter previously unreported hazardous materials during project construction. However, such materials could be discovered during project construction. Mitigation has been identified for this effect (Mitigation Measure HAZ-1).

Alternative E. Fairvac Auto and Truck Wrecking/North Bay Trucking/City Towing and Transport site is located at 5016 Peabody Road in the City of Fairfield. The site is shown in Figure 3.12-2. Portions of this site are used as an auto wrecking yard, which potentially stores and/or uses several types of hazardous materials, including gasoline, diesel fuel, solvents for parts cleaning, batteries, antifreeze, coolants, and lubricants. This facility was not listed on the RWQCB or EFS Database Report. A small strip of right-of-way on the east side of the site would be required for Alternative E. The area of right-of-way to be acquired includes portions of land that are currently being used as storage sites for wrecked cars. The elimination of this storage area and removal of the wrecked cars may reveal contaminated soil. Additional unknown hazardous materials associated with soil and groundwater contamination may be encountered. Mitigation has been identified for this effect (Mitigation Measures HAZ-1, HAZ-2, HAZ-3, HAZ-8, and HAZ-9).

In addition, Alternative E could encounter previously unreported hazardous materials, as described above for Alternatives B, C, and D. Mitigation has been identified for this effect (Mitigation Measure HAZ-1).

Impact HAZ-2: Would the Alternatives Expose Known Hazardous Materials to Humans or the Environment?

Alternative A. This alternative would not involve the use of or potential unearthing of any known hazardous materials because no construction or excavation would occur. There would be no potential for exposure of humans or the environment to known hazardous materials in excess of whatever potential already exists.

Alternatives B and C. The ISA indicates that the Alternative B and Alternative C alignments generally have the potential for exposure to hazardous materials in the form of ADL, polychlorinated biphenyls (PCBs) in transformers, heavy metals such as chromium and lead in yellow street striping, and petroleum hydrocarbons from leaking storage tanks, petroleum pipelines, and railroad use.

ADL could be present at levels above regulatory thresholds along heavily traveled roadways because of lead additives in gasoline used up until approximately 1987. Such roadways in the corridor include Walters Road north of the intersection with Petersen Road, Vanden Road, and Leisure Town Road north of its intersection with Alamo Drive, and Peabody Road. Mitigation has been identified for this effect (Mitigation Measures HAZ-3 to HAZ-8).

The ISA identified two leaking storage tank sites along the alignment shared by Alternative B and Alternative C: 817 Leisure Town Road and 2301 Walters Road.

The Union 76 Gasoline Service Station site is located at 817 Leisure Town Road in the City of Vacaville. This site is used as a gas station and is listed as an open LUST on the EFS database report. The site is located on the east side of Leisure Town Road. Recent groundwater monitoring reports indicate gasoline range organics (GRO), Benzene, and methyl tertiary butyl ether (MTBE) contaminants. A proposed remediation system was installed on the site in early 2008 and is expected to be in place for four years. Groundwater depth is between 10 and 15 feet below ground surface and flows to the southeast. No right-of-way is required and no physical improvements are proposed adjacent to or within 500 feet of this site; therefore, it is not anticipated that the Union 76 site would impact the project.

The Bonfare Market site is at 2301 Walters Road in the City of Fairfield. This site is used as a gas station and is listed as an open LUST on the EFS database report. The site is located on the west side of Waters Road as shown in Figure 3.12-3a. Recent groundwater monitoring reports indicate the presence of total petroleum hydrocarbons gasoline (TPH-g), MTBE, tert-butyl alcohol (TBA), and tert-amyl methyl ether (TAME). It appears that the groundwater contamination extends beneath Walters Road. An ozone sparge remediation system was installed in early 2007 and it is likely that a separate system will be required for plume treatment and could be in place for at least five years. Groundwater depth is relatively shallow in the 3 to 7 feet range. No right-of-way is required from this site; however roadway and trenching operations would occur adjacent to the site within Walters Road. It is probable that contaminated soil and groundwater would be encountered. Mitigation for the contaminated soil and groundwater has been identified (Mitigation Measure HAZ-8).

Other potential sources of contamination include aerially applied chemicals during agricultural use of adjacent parcels that could present a respiratory irritant to construction workers. Construction may require the movement or disposal of soils or materials containing some or all of these hazardous materials. Mitigation has been identified for this effect (Mitigation Measures HAZ-3 to HAZ-8).

Alternative D. The potential for exposure to hazardous materials under Alternative D would be similar to that described above for Alternatives B and C. However, in addition to the two leaking storage tank sites identified above, the alignment of Alternative D would also pass near a leaking underground storage tank on Huntington Drive.

The Owens-Illinois Plastics Product Plant is located at 2500 Huntington Drive. This site is shown in Figure 3.12-3a. This manufacturing facility has an open LUST case on the EFS database report. Recent reports indicate concentrations of 1,1-DCE, 1,1-DCA and 1,1,1-TCA. A request for closure was denied in early 2006 by RWQCB because of 1,1-DCE concentrations in one of the wells. Remediation appears to be working based on test results; however, there is no information on the length of the cleanup. It appears only groundwater monitoring is occurring at this time. The depth of groundwater and information on the plume was not available from RWQCB Geotracker Database. It is possible that contaminated soil and groundwater would be encountered during construction of Alternative D. A strip of right-of-way on the southeast side of the site adjacent to Huntington Road is required for Alternative D. Roadway construction activities including trenching would be required adjacent to the site. Mitigation for the contaminated soil and groundwater has been identified (Mitigation Measures HAZ-8 and HAZ-9).

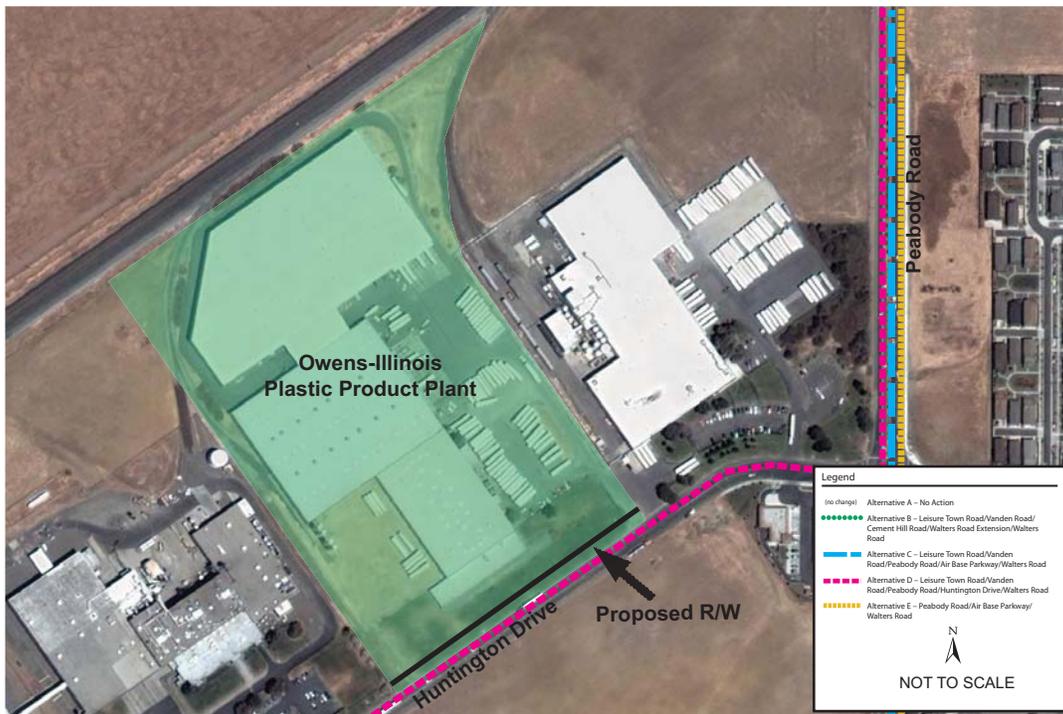


Figure 3.12-3a
Sites with Known Hazardous Materials

Alternative E. The potential for exposure to hazardous materials under Alternative E would be similar in nature to that described above for Alternatives B and C. Leaking storage tanks present along the alignment of Alternative E include: 2301 Walters Road, 101 Peabody Road, and 177 Peabody Road. In addition, roadways along the alignment with the potential for ADL would also include Peabody Road. Mitigation has been identified for this effect (Mitigation Measures HAZ-3 to HAZ-6).

The former Shell Service Station site is located at 101 Peabody Road on the southeast corner of Peabody Road and Elmira Road in the City of Vacaville, as shown in Figure 3.12-3b. This site, currently a closed gas station, was listed as an open LUST on the RWQCB Geotracker database report. Recent reports indicate concentrations of MTBE and other contaminants in two of the six groundwater monitoring wells. The highest concentrations of groundwater contaminants are located on the northwest corner of the site adjacent to Peabody Road. The groundwater is relatively deep, in the range of 17 to 20 feet, and the plume flows towards the east, away from Peabody Road. The site does not appear to have any ongoing clean up efforts. A strip of right-of-way on the west side of the site adjacent to Peabody Road is required for Alternative E. Roadway construction activities, including trenching, would be required adjacent to the site. Mitigation for the contaminated soil and groundwater has been identified (Mitigation Measures HAZ-8 and HAZ-9).

The Flying J site is located at 177 Peabody Road in the City of Vacaville. This site is shown in Figure 3.12-3b. This active gas station was listed as an open LUST on the RWQCB Geotracker database report. Recent reports indicate concentrations of MTBE, benzene, TPHg and other contaminants in the Upper Water Bearing Zone. The highest concentrations of groundwater contaminants are located on the center and eastern portions of the site. The groundwater is relatively deep, in the range of 8 to 16 feet, and the plume flows towards the east away from Peabody Rod. The site is under remediation, but the clean up duration is unknown. A strip of right-of-way on the west side of the site adjacent to Peabody Road is required for Alternative E. Roadway construction activities, including trenching, would be required adjacent to the site. Mitigation for the contaminated soil and groundwater has been identified (Mitigation Measures HAZ-8 and HAZ-9).

Impact HAZ-3: Would the Alternatives Expose Humans and the Environment to Hazardous Conditions from the Accidental Release of Hazardous Materials?

Alternative A. This alternative would not involve the use or potential unearthing of any hazardous materials because no construction or excavation would occur. There would be no potential for exposure of humans or the environment to hazardous materials in excess of whatever potential already exists.

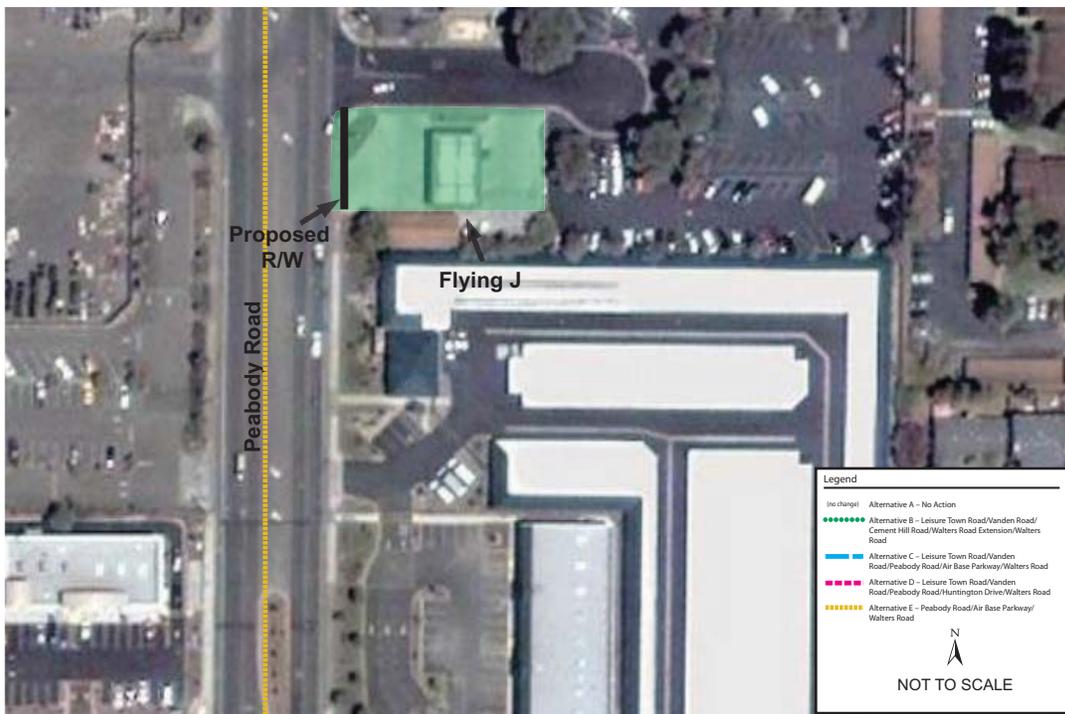
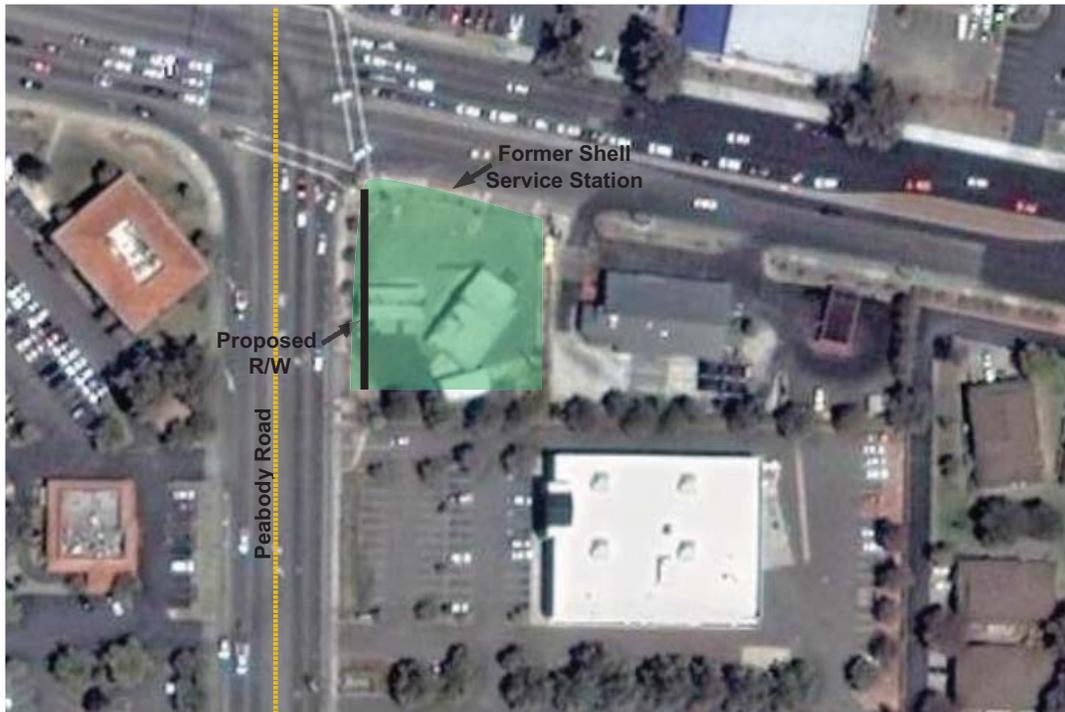


Figure 3.12-3b
Sites with Known Hazardous Materials
 3.12-16

Alternatives B, C, D, and E. Construction of all the build alternatives would involve the use of heavy equipment, small quantities of hazardous materials (e.g., petroleum and other chemicals used to operate and maintain construction equipment), and larger quantities of potentially hazardous road construction materials (i.e., black-topping materials) that may result in hazardous conditions onsite. In addition, sanitary sewer and petroleum pipelines may cross or exist within the planned roadway alignment for these alternatives. Furthermore, other unknown abandoned pipelines may exist within the corridor. If pre-existing leaks are encountered or if pipelines are ruptured during construction, construction workers or nearby land uses could be exposed to biological or hazardous material contamination. Mitigation has been identified for this effect (Mitigation Measure HAZ-1).

Impact HAZ-4: Would the Alternatives Result in Cumulative Hazardous Materials Effects?

Additional cumulative development in the corridor could disturb existing hazardous materials and generate additional hazardous materials. For each of the build alternatives, however, mitigation measures will require STA or the appropriate local agency to conduct site-specific hazardous materials investigations, prepare and implement a safety plan, and design and construct the project to avoid or minimize the potential exposure of humans and the environment to hazardous conditions. With implementation of Mitigation Measures HAZ-1 to HAZ-8, the project is not anticipated to make a considerable contribution to cumulative impacts related to hazardous materials.

3.12.4 Avoidance, Minimization, and/or Mitigation Measures

Options to avoid areas of known and potential contamination areas will continue to be investigated during the design phase. Of the four build alternatives, only Alternative D and Alternative E require right-of-way from known or potentially contaminated sites. Alternative D and Alternative E have right-of-way and physical constraints on both sides of the proposed roadway that make alignment modifications unfeasible to avoid the contaminated sites. The design of proposed storm sewer facilities in and around potential contaminated soil sites would include minimization and avoidance measures to reduce the potential to come in contact with contaminated soil.

Mitigation Measure HAZ-1: Develop a Health and Safety Plan to Address Worker Health and Safety.

A Health and Safety Plan (HSP) shall be prepared to address worker safety when working with potentially hazardous materials, including biological contaminants, potentially lead-based paint, transformer fluids, soils potentially containing ADL, and other construction-related materials within the right-of-way for any soil disturbance. Proper worker safety for handling and removal of contaminated soil materials shall also be included in the HSP and the HSP shall address worker safety when working in areas with agricultural chemicals.

Furthermore, the STA or the appropriate local agency shall confirm the location of underground pipeline crossings and prepare and implement the HSP for excavation work at these pipeline crossings prior to excavation activities. Critical locations may require a private utility location or special excavation techniques. The HSP shall address worker safety when working near pipeline crossings and

emergency plans in the event of a pipeline rupture or if a pre-existing leak is encountered during construction.

Mitigation Measure HAZ-2: Perform Additional Literature Review to Identify Potential for Historical Contamination. During the design phase, STA shall perform a literature review, including a file review at the Solano County Resource Management Agency, to determine past site uses and the extent of any hazardous materials issues that may exist at the auto wrecking facilities (Adco Auto Wreckers on Cement Hill Road and Fairvac Auto and Truck Wrecking on Peabody Road). If there is a potential for contamination from these sites within the proposed alignment in this area, soil sampling and screening for potential contaminants shall be conducted at representative locations according to a Solano County Resource Management Agency approved Sampling Plan for a Phase II site assessment. If contaminated soil and/or groundwater is encountered during the site screening, a Health and Safety Plan shall be completed to address potential worker health and safety issues while working with contaminated soil and/or groundwater and a Soil Management Plan shall be completed to address excavation, removal, and disposal of contaminated soil. These plans shall be approved by the Solano County Resource Management Agency or other appropriate regulatory agency prior to grading of the project segment within this area.

Mitigation Measure HAZ-3: Conduct Soil Sampling and Analysis to Identify and Remove Contaminated Soil. STA or the appropriate local agency shall require the construction contractor to perform a detailed walking reconnaissance of the Union Pacific Railroad (UPRR) and former Sacramento Northern Railroad tracks immediately adjacent to or intersected by the planned roadway alignment. This reconnaissance shall be performed to identify potentially stained soil, and lubricator and battery boxes containing oil, grease, and other petroleum hydrocarbons along project segments within 50 feet of existing or former railroad alignments. The contractor shall also inspect leaking storage tank sites (all alternatives) and the Kinder Morgan petroleum pipeline alignment in the corridor (Alternatives B, C, and D). Leaking storage tanks at the Bonfare Market, Owens-Illinois Plastic Products Plant, Flying J, and former Shell service station shall be inspected and sampled for contamination.

If potentially contaminated sites are encountered, a Soil Management Plan shall be completed to address testing, excavation, removal, and disposal of contaminated soil. If soil staining or visible contaminants are encountered during construction, soil sampling and analysis shall be performed and contaminated soil removed from the site and transported to an approved disposal facility in compliance with Occupational Safety and Health Administration (OSHA) safety regulations under the direction of the agency overseeing the project. The Solano County Resource Management Agency and local fire departments shall be notified immediately if contamination is encountered during construction.

Mitigation Measure HAZ-4: Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow Striping along Existing Roadway. Before construction, STA or the appropriate local agency shall ensure that sampling and testing of yellow pavement striping scheduled for removal is performed to determine whether lead is present. If lead is present, the striping shall be removed according to regulatory procedures. If the existing pavement would be buried by new pavement as part of the project, this mitigation measure would not be required. Burying existing pavement would

effectively eliminate precipitation contact with the lead-contaminated paint and the potential for lead to leach from the paint into soils and runoff. All aspects of the proposed action associated with removal, storage, transportation, and disposal will be in strict accordance with appropriate regulations. Lead-containing stripe materials shall be disposed of at a Class 1 disposal facility.

Mitigation Measure HAZ-5: Conduct Sampling and Analysis of Transformer Fluid from Electrical Transformers. If leaks from electrical transformers that will either remain within the project construction zone or require removal or relocation are encountered before or during construction, STA or the appropriate local agency shall ensure that the transformer fluid is sampled and analyzed by qualified personnel for detectable levels of PCBs. The owner of the transformers shall verify the contents of the transformer before relocation and take proper mitigation actions, if required. If PCBs are detected, the transformer shall be removed and disposed of in accordance with regulatory agency requirements. Any stained soil encountered below electrical transformers with detectable PCB levels shall also be handled and disposed of in accordance with regulatory agency requirements.

Mitigation Measure HAZ-6: Conduct Testing for Aerially Deposited Lead in Surface and Near-Surface Soils. During the design phase of the project, STA or the appropriate local agency shall ensure that the contractor conducts a preliminary investigation and screening for ADL for portions of the project located immediately adjacent to Leisure Town Road (north of Alamo Drive), Peabody Road, Air Base Parkway, and Walters Road (from south of Air Base Parkway to Petersen Road) to determine the levels of lead in the surface and near-surface soils. If ADL is encountered above the regulatory thresholds, a Soil Management Plan, approved by the Solano County Resource Management Agency or other appropriate regulatory authority, shall be completed to address excavation, removal, and disposal of contaminated soil. Lead-impacted soils shall be handled or disposed of in accordance with regulatory agency requirements.

Mitigation Measure HAZ-7: Time Construction to Avoid Exposure of Construction Workers to Respiratory Irritants from Aerially Applied Chemicals. Construction activities adjacent to agricultural fields shall not occur during aerial application of chemicals and for at least 24 hours following application or for as long as recommended by the chemical label, whichever time period is greater. STA or the appropriate local agency shall ensure that the contractor coordinates with individual growers on the timing of aerially applied chemicals on parcels within or adjacent to the corridor to avoid effects on workers during construction.

Mitigation Measure HAZ-8: Test Soil and Groundwater at LUST and UST Sites and Remove Contaminated Soil. Soil and groundwater samples will be taken using direct push Geoprobe equipment within the vicinity of the UST and LUST sites. The samples will be tested for petroleum hydrocarbons and California Administrative Manual (CAM)-17 metals. Leaking storage tanks at the Bonfare Market, Owens-Illinois Plastic Products Plant, Flying J, and former Shell service station shall be inspected and sampled for contamination. A report will be submitted to STA upon receipt of analytical results. Areas of contaminated soil will be transported off site, if necessary. Impacted groundwater will be containerized in a Baker tank and analyzed prior to evaluating disposal options. An environmental report summarizing field activities and analytical results will be prepared for sites. This report will include a summary of excavation and disposal activities for impacted soil and/or groundwater.

Based on preliminary engineering requirements for excavation, ground water depths, and site conditions, potential contaminated soil and groundwater volumes and associated remediation costs were developed for each hazardous release site discussed in the impacts section and shown in Figures 3.12-2, 3.12-3a, and 3.12-3b. Table 3.12-3 presents the potential volume of contaminated soil and groundwater and the potential costs for remediation of each site. Remediation costs for soil includes removing the contaminated soil, transporting the contaminated soil to a Class II hazardous waste site, and importing clean soil.

**Table 3.12-3
Summary of Potential Soil and Groundwater Contamination Mitigation Costs by Location**

Location	Volume of Potential Contaminated Soil / Remediation Costs	Volume of Potential Groundwater Contamination / Remediation Costs
10. Owens-Illinois Plastics Product Plant (2500 Huntington Drive) – Alternative D	3,300 CY / \$485,300	Not Applicable
11. S & W Paving, AAA Sales, and Adco Auto Wrecking (2400 Cement Hill Road, Fairfield) – Alternative B	1,130 CY / \$186,800	22,800 Gallons / \$14,500
13. Bonfare Market (2301 Walters Road, Fairfield) – Alternatives B, C, D, and E	710 CY / \$127,600	24,000 Gallons / \$15,300
15. Former Shell Service Station (101 Peabody Road, Vacaville) – Alternative E	480 CY / \$85,400	9,600 Gallons / \$6,100
18. Flying J (177 Peabody Road, Vacaville) – Alternative E	630 CY / \$105,500	7,800 Gallons / \$5,000
23. Fairvac Auto and Truck Wrecking/North Bay Trucking/City Towing and Transport (5016 Peabody Road, Fairfield) Alternative E	960 CY / \$202,000	18,000 Gallons / \$11,400

Notes: CY = Cubic Yards

Mitigation Measure HAZ-9: Phase 2 Environmental Site Assessments (ESA). As part of the design process, site specific Phase 2 ESAs will be conducted for each parcel that requires a full or partial right-of-way take. The Phase 2 ESA will be conducted in accordance with requirements of the Final Rule for All Appropriate Inquires promulgated as an amendment to CERCLA. Areas potentially impacted with contaminants will be investigated and sampled, the constituents of concern identified, and any impacts delineated in the Phase 2 ESA. STA or the local agency will make every effort to have the property owner, or responsible party, investigate and clean-up the contamination prior to acquisition.