



Draft Tier 1 Environmental Impact Statement and Preliminary Section 4(f) Evaluation

Section 3.11, Hazardous Materials

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1 **3.11 Hazardous Materials**

2 Hazardous materials, which also may include hazardous waste, hazardous substances,
3 petroleum products, or other regulated materials, could be encountered during construction
4 along the Interstate 11 (I-11) Corridor Study Area (Study Area). These materials can be found in
5 various forms and can originate from a variety of sources. Examples of potential properties that
6 may generate or use hazardous materials include landfills, gas stations, industrial facilities, dry
7 cleaners, military installations, and railroad corridors. The disturbance of soil and/or
8 groundwater contamination within the Study Area may adversely impact human health and the
9 environment, and negatively affect the cost and schedule of the project. Early identification of
10 facilities that may be impacted by a release of hazardous materials provides valuable
11 information for the alternatives analysis, design, right-of-way acquisition, and engineering, as it
12 may be possible to design alignments to avoid these facilities. If hazardous materials cannot be
13 avoided, it is important to identify the additional work required to mitigate those impacts before
14 property acquisition and the start of construction.

15 Hazardous materials also are transported through the Study Area on existing transportation
16 routes and could be transported through future transportation routes. Transportation of
17 hazardous materials and procedures for avoiding, minimizing, and cleaning spills are addressed
18 by local, state, and federal transportation design standards; freight transportation regulations;
19 and management requirements for specific hazardous substances. The movement and use of
20 hazardous materials presents exposure risks from accidental releases and spills. Many local
21 agencies and organizations have developed plans to address accidental releases and spills.
22 Two examples of these plans include the Pima County Multi-Jurisdictional Hazard Mitigation
23 Plan and the plans developed by CAVSARP/SAVSARP to protect their basins and water wells.
24 These plans are localized in nature and address the resources that local agencies will use if
25 there is a spill and the local resources that are of greatest concern.

26 **3.11.1 Regulatory Setting**

27 Environmental regulations are developed and enforced by federal, state, and local
28 governments. States can adopt regulations that are at least as strict as the federal regulations
29 and obtain primacy to enforce such regulations. **Table 3.11-1** (Hazardous Materials
30 Regulations) summarizes common regulations that pertain to hazardous materials.

Table 3.11-1 Hazardous Materials Regulations

Regulation	Description
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) enacted in 1980 (42 United States Code [USC] § 9601 et seq.) and subsequently amended by the Superfund Amendments and Reauthorization Act (42 USC § 9601 et seq.) (Superfund)	This law authorizes the United States Environmental Protection Agency (USEPA) to identify parties responsible for contamination of closed or abandoned sites and compel the parties to clean up the sites. Sites are reported to USEPA, and based on the results of an investigation, USEPA either determines that no further action is necessary at the federal level (but may refer the site to the state for additional activities) or place the site on the National Priority List (NPL). Sites remain on the NPL until cleanup activities have been completed, and the site is removed or delisted.

Table 3.11-1 Hazardous Materials Regulations (Continued)

Regulation	Description
Formerly Used Defense Sites (FUDS)	The Department of Defense used land to train and test soldiers and weapons to ensure the nation’s military readiness. The Department of Defense is responsible for environmental restoration (cleanup) of properties that were formerly owned by, leased to, or otherwise possessed by the United States (US) and under the jurisdiction of the Secretary of Defense prior to October 1986. Environmental cleanup of FUDS sites is conducted under CERCLA.
Resource Conservation and Recovery Act (RCRA) (42 USC § 321 et seq.), enacted in 1976	RCRA establishes a framework for the management of both solid waste and solid hazardous waste. RCRA Subtitle C authorizes the USEPA to develop regulations for cradle-to-grave management of these wastes.
Arizona State regulation for management of both solid waste (Arizona Revised Statute [ARS] Title 49, Chapter 4 and Arizona Administrative Code [AAC] Title 18, Chapter 13) and hazardous waste (ARS Title 49, Chapter 5 and AAC Title 18, Chapter 8).	The Arizona Department of Environmental Quality (ADEQ) regulates hazardous waste through implementation of the USEPA regulations. State solid waste regulations in Arizona regulate solid waste facilities (landfills), including: municipal and non-municipal solid waste landfills; biohazardous medical waste facilities; solid waste transfer stations; waste tire collection sites; special waste transporters and receivers; used oil marketers, processors, and transporters; and battery collection sites.
Water Quality Assurance Revolving Fund (WQARF) ARS Title 49, Chapter 2 and AAC Title 18, Chapter 16)	The State of Arizona has regulations to address sites potentially impacted by hazardous substances. This program is administered by the ADEQ. The model of the WQARF program is similar to CERCLA, with sites investigated and either cleaned up or granted a determination that no further action is necessary.
Underground Storage Tanks (UST) (ARS Title 49, Chapter 6 and AAC Title 18, Chapter 12)	Regulation of USTs that are used to store either gasoline, petroleum products, or certain hazardous substances is the responsibility of ADEQ. USTs are commonly used at retail fueling stations, auto repair facilities, and fleet service operators. Releases from USTs (Leaking USTs [LUSTs]) must be reported to ADEQ and investigated to evaluate whether remedial action is required. Regulations provide guidance for remediation of releases and closure of facilities after remediation is complete.
Voluntary Remediation Program (VRP) and Brownfields	VRP encourages property owners and other interested parties to voluntarily remediate impacted properties. Ineligible sites include: those that are listed on the WQARF registry with the same contaminants of concern; and hazardous waste sites and UST sites undergoing certain remedial actions required by ADEQ, a court of law, or an administrative order. The Brownfields program assists with cleanup and redevelopment of abandoned or underutilized properties where reuse is complicated by actual or perceived environmental contamination. The Brownfields program is administered through ADEQ with funding from the USEPA state response grant.
Other Regulations	Other state and federal regulations exist; however, they are not applicable to this project since there are no identified facilities under their jurisdiction within the Study Area.



1 **3.11.2 Methodology**

2 The assessment of hazardous materials involves analyzing two types of potential impacts. The
3 first type involves the possibility of encountering hazardous materials during future construction
4 activities. This impact is assessed by identifying the number and general characteristics of
5 known sites within the 2,000-foot-wide Project Area and considering the anticipated disturbance
6 area within the Corridor Options that are co-located with other roadways and Corridor Options
7 that occur in new locations. The density of sites and the relative magnitude of the anticipated
8 construction disruption are considered to qualitatively assess the risk of encountering hazardous
9 materials during construction. The second potential impact involves hazardous materials
10 exposure that could result from a spill or accident on I-11 associated with the transportation of
11 hazardous materials.

12 Properties with contamination issues that have been reported to a regulatory agency were
13 identified. The search radius for these properties used the ASTM International (ASTM) Standard
14 for Phase I Environmental Site Assessments, specified in ASTM E1527-13. This means that the
15 search radius for hazardous materials varies by the type of site and the governing regulations.
16 Generally, the search radius identified hazardous materials located within 0.25 mile and 1 mile
17 from the centerline for all Build Corridor Alternatives. This Analysis Area is inclusive of the
18 2,000-foot-wide Project Area within which I-11 could be located.

19 The analysis outlines the number of potential facilities that occur within the Corridor Options.
20 The analysis does not include a detailed review of each facility identified, such as whether a
21 release was reported or confirmed, regulatory compliance, remediation, or regulatory closure.
22 Therefore, many of the sites recorded may have limited or no remaining environmental
23 conditions. Others may have environmental conditions that require substantial remediation. For
24 this Tier 1 analysis, the number and types of facilities were identified within the prescribed
25 ASTM search distances, and utilized to evaluate the potential for environmental consequences
26 related to hazardous materials.

27 Federal database listings that were reviewed include: hazardous waste sites, Brownfields sites,
28 NPL/Superfund sites, and FUDS. State database listings that were reviewed include:
29 Declaration of Environmental Use Restriction sites; dry cleaners; USTs; LUSTs; open and
30 closed landfills; state hazardous waste sites; VRP and Brownfields sites; and WQARF sites.
31 Other readily available databases were searched including the City of Tucson landfill registry
32 and applicable Tribal databases for USTs, LUSTs, and open dumps. It is possible that a facility
33 may be listed on multiple databases (and thus counted more than once).

34 The types of sites can often be used to inform the potential risk a facility may pose. For
35 instance, a Superfund site generally carries with it a high potential environmental liability (and
36 corresponding high project risk) as the criteria for placement in Superfund is that the facility has
37 a higher magnitude of contamination, and thus increased potential to negatively affect human
38 health and the environment. RCRA corrective action sites, or WQARF sites, (where releases of
39 hazardous substances to the soil or groundwater have been confirmed) also may carry a high
40 potential liability (and corresponding high project risk). In the following list, generally, the risk
41 level descends from highest to lowest, but this is in no way the rule, as risks will vary from
42 facility to facility, and by the type of disturbance that would occur from the Build Corridor
43 Alternatives. Using this protocol, the data obtained for this analysis was compiled into the
44 following types of sites:



- 1 • Superfund
- 2 • Hazardous Waste
- 3 • UST/LUST
- 4 • VRP and Brownfields
- 5 • Landfill
- 6 • Environmental Covenant

7 Superfund sites present a considerable risk if they are encountered. Often these facilities have
8 complicated, considerable, and costly contamination issues spread over large areas both
9 horizontally and vertically, and tend to have known impacts that pose high risks to human health
10 and the environment. Hazardous waste facilities under a corrective action program also tend to
11 have complicated environmental releases, and the magnitude of releases could be localized or
12 spread over a large area; thus, the risks can vary, but sometimes those risks may be large.
13 UST/LUST facilities tend to have more localized impacts; however, the magnitude of the
14 number of facilities, particularly along heavily urbanized travel corridors, should not be
15 discounted. VRP/Brownfields, landfill, and environmental covenant facilities occur less
16 frequently throughout the Study Area and tend to have impacts that are localized at or near the
17 source facilities.

18 The database searches supporting the analysis of hazardous materials concerns were
19 performed in June and July 2017. The database search results, including applicable mapping,
20 are available in **Appendix E11**. It is important to acknowledge that hazardous materials
21 evaluations may be constrained by active or completed remedial actions, reported releases,
22 new or historical facilities that will be identified in the future, and other factors. Therefore,
23 information related to these items would be updated during the Tier 2 National Environmental
24 Policy Act (NEPA) studies to maintain up-to-date information. Further, during the Tier 2 NEPA
25 analysis, evaluation of the environmental consequences will be completed for a specific
26 alignment, as well as project-specific mitigation measures.

27 **3.11.3 Affected Environment**

28 There are 780 regulated sites in the South Section within the ASTM search radius
29 (**Table 3.11-2** [Regulated Sites – Comparison of Options from Nogales to Casa Grande]).
30 Option B generally follows the existing I-10 alignment. Option B begins near Sahuarita, travels
31 through Tucson, and ends near Marana. This Option contains the largest number of regulated
32 sites (619), including the largest number of Superfund sites (93). The number of Superfund sites
33 in Option B is higher than all the other Corridor Options combined (93 vs. 12). Option B also has
34 more total sites than all of the other Corridor Options combined (619 vs. 158). The largest
35 number of regulated sites in Option B is UST/LUST (235) and hazardous waste (188) sites;
36 therefore, potential risks are likely localized near those specific facilities depending on the
37 magnitude of the releases, if any. Most of the remaining regulated sites are in Option G (near
38 Casa Grande), Option A (north of Nogales), and Option D (near Avra Valley). Option C and
39 Option F each have less than 10 regulated sites. Both Central Arizona Project (CAP) Design
40 Options each have an additional site in comparison to Options C and D.



Table 3.11-2 Regulated Sites – Comparison of Options from Nogales to Casa Grande

Type of Site	Corridor Options						
	A	B	C	D	F	G	Total
Superfund	3	93	2	4	2	1	105
Hazardous Waste	23	188	3	9	3	9	235
UST/LUST ⁽¹⁾	22	235	1	15	2	54	329
VRP ⁽²⁾ and Brownfields	1	65	0	1	0	0	67
Landfill	3	36	0	1	1	1	42
Environmental Covenant	0	2	0	0	0	0	2
Total	49	619	6	30	8	65	780

(1) Underground Storage Tank/Leaking Underground Storage Tank.

(2) Voluntary Remediation Program.

SOURCE: GeoSearch E RecSearch Reports, June 29, 2017 through July 3, 2017.

1 There are 51 regulated sites in the Central Section within the ASTM search radius (**Table 3.11-3**
 2 [Regulated Sites – Comparison of Options in the Central Section]). Options H, K, and Q1 in the
 3 Central Section were evaluated together because of their geographic proximity and setting.
 4 Options I1, I2, and L also were evaluated together as they are geographically proximate and
 5 their settings were similar. Generally, the area from Casa Grande to Buckeye (Central Section)
 6 is relatively undeveloped, and the number of sites identified is smaller than in the area to the
 7 south.

Table 3.11-3 Regulated Sites – Comparison of Options in the Central Section

Type of Site	Corridor Options							Total
	H, K, and Q1	I1, I2, and L	M	N	Q2	Q3	R	
Superfund	0	0	0	1	0	1	1	3
Hazardous Waste	5	0	0	7	1	5	3	21
UST/LUST ⁽¹⁾	14	3	0	0	0	7	0	24
VRP ⁽²⁾ and Brownfields	0	0	0	0	0	0	0	0
Landfill	2	1	0	0	0	0	0	3
Environmental Covenant	0	0	0	0	0	0	0	0
Total	21	4	0	8	1	13	4	51

(1) Underground Storage Tank/Leaking Underground Storage Tank.

(2) Voluntary Remediation Program.

SOURCE: GeoSearch E RecSearch Reports, June 29, 2017 through July 3, 2017.

8 There are six regulated sites in the North Section within the ASTM search radius (**Table 3.11-4**
 9 [Regulated Sites – Comparison of Options in the North Section]). Options in the North Section



- 1 have the fewest regulated sites and no Superfund sites. All of the regulated sites in the North
- 2 Section are USTs or LUSTs, which are spread evenly with the three Options.

Table 3.11-4 Regulated Sites – Comparison of Options in the North Section

Type of Site	Corridor Options			Total
	S	U	X	
Superfund	0	0	0	0
Hazardous Waste	0	0	0	0
UST/LUST ⁽¹⁾	2	2	2	6
VRP ⁽²⁾ and Brownfields	0	0	0	0
Landfill	0	0	0	0
Environmental Covenant	0	0	0	0
Total	2	2	2	6

(1) Underground Storage Tank/Leaking Underground Storage Tank.

(2) Voluntary Remediation Program.

SOURCE: GeoSearch E RecSearch Reports, June 29, 2017 through July 3, 2017.

- 3 Overall, there are 837 regulated sites within the ASTM search radius (**Table 3.11-5** [Regulated
- 4 Sites –Study Area]). Hazardous materials sites are more prevalent in highly developed areas in
- 5 the South Section, including within Tucson, where more dense land uses and a longer history of
- 6 development, may have resulted in releases of hazardous materials to the soil and/or
- 7 groundwater.
- 8 Developed urban areas tend to have more facilities that are riskier in terms of potential project
- 9 exposure to hazardous materials, such as Superfund sites. Areas where less development has
- 10 occurred (e.g., undeveloped or agricultural areas) tend to demonstrate less risk as related to
- 11 hazardous materials sites.

Table 3.11-5 Regulated Sites – Study Area

Type of Site	Total
Superfund	108
Hazardous Waste	256
UST/LUST ⁽¹⁾	359
VRP ⁽²⁾ and Brownfields	67
Landfill	45
Environmental Covenant	2
Total	837

(1) Underground Storage Tank/Leaking Underground Storage Tank.

(2) Voluntary Remediation Program.

SOURCE: GeoSearch E RecSearch Reports, June 29, 2017 through July 3, 2017.



1 **3.11.4 Environmental Consequences**

2 The potential environmental consequences of the Build Corridor Alternatives are two-fold. The
3 first involves the possibility of encountering hazardous materials during construction and
4 associated human health and environmental health risks. The second comes from the risk of a
5 spill or accident on I-11 associated with the transportation of hazardous materials. Encountering
6 hazardous materials during construction can have negative environmental consequences on
7 human health and the environment due to direct exposures, or by inadvertently distributing
8 contaminants into surrounding soil, surface water, or groundwater. Disturbance of hazardous
9 materials can greatly increase the project costs, and delay a project schedule.

10 Hazardous materials are transported through the Study Area on existing transportation routes,
11 and could be transported on the future transportation routes associated with the Build Corridor
12 Alternatives. The movement of hazardous materials presents exposure risks from accidental
13 releases and spills. The construction of I-11 would have beneficial effects on transportation
14 safety after roadway construction is completed. However, in some instances, new risks could be
15 added where new routes expose sensitive receptors such as water resources, wildlife habitat, or
16 recreation resources to new hazardous materials, or reduced proximity to adjacent receptors
17 occurs after roadway widening. In these instances, reduced risks elsewhere would generally
18 offset the new risks because of improved travel safety conditions along I-11.

19 The magnitude of impact from hazardous materials during construction is influenced by several
20 variables, including: the magnitude of the planned project disturbance (i.e., the volume of soil
21 disturbance required to meet the project objectives); the probability of hazardous materials sites
22 being near and within the anticipated construction disturbance footprint; the spatial distribution
23 and density of hazardous materials sites; the types of sites (e.g., Superfund); and/or the
24 proximity of the anticipated construction disturbance to sensitive receptors.

25 The co-located Options would have a smaller construction footprint than Options in
26 undeveloped areas so they may be less likely to substantially disturb hazardous materials sites.
27 However, Options in less developed areas may encounter fewer hazardous materials sites
28 because of limited adjacent development. Generally, in both instances, the environmental
29 consequences are likely to be limited.

30 The following text summarizes the hazardous materials sites that could be encountered in the
31 Build Corridor Alternatives. The text generally characterizes the associated risks (Low,
32 Moderate, High) given each Option's potential to disturb existing conditions. Low applies where
33 the anticipated construction footprint is small because of co-location with existing major
34 roadways and the number and/or density of hazardous materials sites are low; or where the
35 anticipated construction footprint is large, but a low density of hazardous materials sites occurs.
36 High risks apply where the anticipated construction footprint is large and/or known sites are
37 present which might be unavoidable during construction. Moderate risks fall in-between. Risks
38 for this project were found to be low.

39 **3.11.4.1 Purple Alternative**

40 The Purple Alternative includes a mix of Corridor Options co-located with existing interstate
41 highways that would require a small construction footprint, and Options using new alignments
42 that would require a large construction footprint. The large construction footprint does not impact
43 a high density of hazardous materials facilities in most Options.

1 The Purple Alternative would pass through an existing Bureau of Land Management (BLM)
 2 multi-use utility corridor within the Vulture Mountains Recreation Area. Two hazardous materials
 3 facilities are recorded in the vicinity. Where new construction footprints are required, avoidance
 4 measures would be implemented. Therefore, the environmental consequences to the Purple
 5 Alternative from hazardous materials would be low. **Table 3.11-6** (Purple Alternative Summary
 6 of End-to-End Considerations) summarizes the environmental consequences within the Purple
 7 Alternative.

Table 3.11-6 Purple Alternative Summary of End-to-End Considerations

Option	# of Hazardous Materials Sites	Construction Footprint (New Disturbance)	Potential Environmental Consequences	Alignment Notes and Sensitive Sites
Option A	52	Small	Low	Follows the existing I-19 alignment Near the Tumacacori National Historical Park.
Option C Sandario Road (CAP Design Option)	6 (1)	Large	Low	Follows some existing rural roads, but generally requires a larger construction footprint. Near CAVSARP/SAVSARP.
Option G	65	Small	Low	Follows existing I-10 and I-8 alignments Near Picacho Peak State Park.
Options I[1,2], L	4	Large	Low	Generally large construction footprint and few sites. Juan Bautista de Anza National Historic Trail Management Area.
Option N	8	Large	Low	Generally large construction footprint and few sites.
Option R	4	Large	Low	Generally large construction footprint and few sites.
Option X	2	Large	Low	Generally large construction footprint and few sites. Near the Hassayampa Special Recreation Management Area.
End-to-End Considerations	141	Varies	Low	Aside from Options A and G, most of the construction footprints are in undeveloped areas where relatively few hazardous materials sites occur.

8 **3.11.4.2 Green Alternative**

9 The Green Alternative includes a mix of Corridor Options co-located with interstate highways
 10 that would require a small construction footprint and Options using new alignments that would
 11 require a large construction footprint. The large construction footprint does not impact a high
 12 density of hazardous materials facilities in most Options. Where new construction footprints are



- 1 required, avoidance measures would be implemented. Therefore, the environmental
- 2 consequences to the Green Alternative from hazardous materials would be low. **Table 3.11-7**
- 3 (Green Alternative Summary of End-to-End Considerations) summarizes the environmental
- 4 consequences within the Green Alternative.

Table 3.11-7 Green Alternative Summary of End-to-End Considerations

Option	# of Hazardous Materials Sites	Construction Footprint	Environmental Consequences	Alignment Notes and Sensitive Sites
Option A	52	Small	Low	Follows the existing I-19 alignment Near the Tumacacori National Historical Park.
Option D Sandario Road (CAP Design Option)	30 (1)	Large	Low	Requires a larger construction footprint Near CAVSARP/SAVSARP.
Option F	8	Large	Low	Requires a larger construction footprint.
Options I[,2], L	4	Large	Low	Generally large construction footprint and few sites. Near Juan Bautista de Anza National Historic Trail Management Area.
Option M	0	Large	Low	Generally large construction footprint and few sites. Near Buckeye Hills East Trails Special Recreation Management Area.
Option Q2	1	Large	Low	Generally large construction footprint and few sites. Near Buckeye Hills East Trails Special Recreation Management Area; Buckeye Hills West Extensive Recreation Management Area; Robbins Butte Wildlife Area.
Option R	4	Large	Low	Generally large construction footprint and few sites.
Option U	2	Large	Low	Generally large construction footprint and few sites. Near the Hassayampa Special Recreation Management Area
End-to-End Considerations	100	Small to Large	Low	Aside from Option A, most of the construction footprints are in undeveloped areas where relatively few hazardous materials sites occur.



1 **3.11.4.3 Orange Alternative**

2 The Orange Alternative includes a mix of Corridor Options that are co-located with interstate
 3 highways that would require a small construction footprint and new alignments that would
 4 require a large construction footprint. The Orange Alternative does not require as many large
 5 construction footprints as the other Build Corridor Alternatives, but encounters a higher density
 6 of hazardous materials sites. Where new construction footprints are required, avoidance
 7 measures would be implemented. Therefore, the environmental consequences to the Orange
 8 Alternative from hazardous materials would be low. **Table 3.11-8** (Orange Alternative Summary
 9 of End-to-End Considerations) summarizes the environmental consequences within the Orange
 10 Alternative.

Table 3.11-8 Orange Alternative Summary of End-to-End Considerations

Option	# of Hazardous Materials Sites	Construction Footprint	Environmental Consequences	Alignment Notes and Sensitive Sites
Option A	52	Small	Low	Follows the existing I-19 alignment. Near the Tumacacori National Historical Park.
Option B	619	Small	Low	Follows the existing I-19 and I-10 alignments through Tucson.
Option G	65	Small	Low	Follows the existing I-10 alignment. Near Picacho Peak State Park.
Options H+K+Q[1,2,3]	35	Small	Low	Follows existing I-8, US 85, and I-10 alignments. Near the Sonoran Desert National Monument; Buckeye Hills East Trails Special Recreation Management Area; Buckeye Hills West Extensive Recreation Management Area; Robbins Butte Wildlife Area.
Option S	2	Large	Low	Generally large construction footprint and few sites. Near the Hassayampa Special Recreation Management Area.
End-to-End Considerations	773	Small to Large	Low	More overall sites than other alternatives, as this alternative is located in more urban environments with more development, but overall smaller construction footprint.



1 **3.11.4.4 No Build Alternative**

2 The No Build Alternative is the “do-nothing” alternative. The Arizona Department of
3 Transportation (ADOT) would complete the committed widening improvements and routine
4 maintenance for this alternative. Construction impacts from the Build Corridor Alternatives would
5 not occur. Previously committed roadway improvement projects would be constructed
6 generating some impacts and some risks while also providing some travel safety benefits.
7 Existing and future protocols related to the evaluation and mitigation of hazardous materials
8 would be followed. Vehicles transporting hazardous materials would continue to use the existing
9 transportation network and risks would be similar to existing conditions. The transportation
10 safety improvements associated with the Build Corridor Alternatives would not occur. No new
11 receptors would be exposed to hazardous materials risks.

12 Under the No Build Alternative, as with the Build Corridor Alternatives, hazardous materials
13 facilities would continue to operate, and hazardous materials transportation would continue
14 within the existing transportation network. Previously committed roadway improvement projects
15 would be constructed, and hazardous materials may be identified and mitigated in soil or
16 groundwater, or may be used in construction equipment. It is expected that existing and future
17 protocols related to the evaluation and mitigation of hazardous materials would be implemented;
18 therefore, the environmental consequences from hazardous materials would be small under the
19 No Build Alternative.

20 **3.11.4.5 Summary**

21 The following summarizes the hazardous materials sites that could be encountered in the three
22 Build Corridor Alternatives and generally characterize the associated risks (Lowest, Low,
23 Moderate, High) given each Option’s potential to disturb existing conditions (**Table 3.11-9**
24 [Summary of Impacts to Hazardous Materials]). Lowest and low applies where the construction
25 footprint is small because of co-location with existing major roadways and the number and/or
26 density of hazardous materials sites are low; or where the construction footprint is large, but a
27 low density of hazardous materials sites occurs. High risks apply where the construction foot is
28 large and/or known sites are present which might be unavoidable during construction. No
29 moderate or high impacts are expected.

30 Review of **Table 3.11-9** (Summary of Impacts to Hazardous Materials) indicates far more
31 hazardous materials site are located within the Orange Alternative but the risks are still low
32 given the potential for impacting those sites. Consequently, despite a higher number of sites,
33 the potential risks for encountering hazardous materials are low and similar for all of the Build
34 Corridor Alternatives.

35 **3.11.5 Potential Mitigation Strategies**

36 The following potential mitigation strategies and best practices for environmental consequences
37 related to hazardous materials for the Proposed Action should be considered during the future
38 Tier 2 NEPA analysis.

- 39 • Update hazardous materials sites search databases to reflect most recent records; conduct
40 reviews of regulatory files prior to the Tier 2 NEPA analysis to evaluate the extent of
41 contamination; and compare to the project construction requirements.
- 42 • Before right-of-way acquisition, conduct a Phase I Environmental Site Assessment for those
43 properties identified for acquisition; based on these assessments, additional subsurface



- 1 investigation may be required depending on the recognized environmental conditions
2 identified and potential risk to the project.
- 3 • Avoid contaminated sites wherever practical; where unavoidable, initiate further site
4 investigation and coordination with affected property owners.
 - 5 • Conduct appropriate surveys for asbestos, lead-based paint, and universal wastes prior to
6 demolition of any building structures and bridges or elevated structures; if these regulated
7 materials are encountered, abate them in accordance with applicable regulations and
8 guidelines.
 - 9 • Prior to construction, prepare and implement a project-specific Health and Safety Plan and
10 Hazardous Materials Management Plan to address potential hazardous materials that could
11 be encountered; these plans should consist of specific measures to protect worker and
12 public health and safety, as well as programs to manage contaminated materials during
13 construction.
 - 14 • In the event that unknown contaminated media is encountered during construction, stop
15 working until the contamination is properly evaluated and measures are developed to
16 protect worker health and safety in accordance with the project-specific Health and Safety
17 Plan and Hazardous Materials Management Plan.
 - 18 • Implement standard construction measures for fugitive dust control, as well as stormwater
19 erosion and sediment controls, to minimize the spread of contaminated soil. During the
20 construction phase, require the contractor to file and abide by a dust management plan to
21 minimize the effects of dust on surrounding communities.
 - 22 • Abide by local, state, and federal regulations regarding the storage and use of hazardous
23 materials on the site.

24 3.11.6 Future Tier 2 Analysis

25 During Tier 2 NEPA analysis, detailed hazardous materials evaluations would be conducted,
26 including: review of regulatory agency files; completion of Phase I Environmental Site
27 Assessment reports; subsurface investigations to quantify the vertical and horizontal distribution
28 of hazardous materials; and remediation planning as needed. Additionally, the identification of
29 practical measures to avoid, minimize, and mitigate the environmental consequences from
30 hazardous materials would be completed.

Table 3.11-9 Summary of Impacts to Hazardous Materials

Type of Site	Alternatives			
	No Build	Purple	Green	Orange
Superfund	No I-11 impacts identified; Existing conditions and baseline trends would continue; Other projects in the Study Area would be subject to their own evaluation.	8 Sites = Lowest	10 Sites = Low	98 Sites = Low
Hazardous Waste		46 Sites = Low	39 Sites = Lowest	231 Sites = Low
UST/LUST ⁽¹⁾		81 Sites = Low	44 Sites = Lowest	354 Sites = Low
VRP ⁽²⁾ and Brownfield		1 Site = Lowest	2 Sites = Low	66 Sites = Low
Landfill		5 Sites = Lowest	6 Sites = Low	42 Sites = Low
Environmental Covenant		0 Sites = Lowest	0 Sites = Lowest	2 Sites = Low
Indirect Effects	No potential indirect effects.	Land development induced by the project could: <ul style="list-style-type: none"> • Result in improved accessibility that induces commercial and/or industrial development in new areas. • Increase the potential for spills or releases to land that is not currently impacted by hazardous materials. 	Similar to the Purple Alternative.	Similar to the Purple Alternative, except: <ul style="list-style-type: none"> • Less potential for effects in South and Central Sections due to the planned co-location with existing transportation facilities.

Table 3.11-9 Summary of Impacts to Hazardous Materials (Continued)

Type of Site	Alternatives			
	No Build	Purple	Green	Orange
Cumulative Effects	Past, present, and reasonably foreseeable projects could: <ul style="list-style-type: none"> Increase use of the existing transportation infrastructure for transport of materials. 	Past, present, and reasonably foreseeable projects could: <ul style="list-style-type: none"> Generate potential incremental effects greater than the No Build alternative due to the increase in transport of materials and the release of existing hazardous materials during construction. 	Similar to the Purple Alternative.	Similar to the Purple Alternative.

(1) Underground Storage Tank/Leaking Underground Storage Tank.

(2) Voluntary Remediation Program.

NOTE: Potential for Impact/Risk:

- Lowest: lowest potential impact from an existing hazardous materials release, past release, or material threat of release. Applies where the construction footprint is small and/or density of hazardous materials sites are low; or where the construction footprint is large, but a low density of hazardous materials sites occurs
- Low: minimal potential impact from an existing hazardous materials release, past release, or material threat of release. Applies where the construction footprint is small and/or densities of hazardous materials sites are low; or where the construction footprint is large, but a low density of hazardous materials sites occurs.
- Moderate: moderate potential impact to the alternative from an existing hazardous materials release, past release, or material threat of release. Applies where the construction footprint is large, and the density of hazardous materials sites is moderate; or where the construction footprint is large, and a moderate density of hazardous materials sites occurs.
- High: a high potential impact to the alternative from an existing hazardous materials release, past release, or material threat of release. Applies where the construction footprint is large, and the density of hazardous materials sites is large; or where the construction footprint is large, and a large density of hazardous materials sites occurs.